

355	360	365
Leu Cys Pro Met Arg Gln	Pro Thr Arg Ile Lys	Phe Cys Asn His Ile
370	375	380
Arg Thr Phe Ala Val Val	Ile Leu Ile Asn His	Phe Phe Gln Ile Leu
385	390	395
Asn Ile Thr Phe Ala Ile	Arg Arg Arg Gln Ser	Ser Arg Ser Ser Pro
405	410	415
Thr Leu Lys Lys Pro Thr	Ala Ile Arg Ser Lys	Gln Arg Tyr Ile Lys
420	425	430
Ser Cys Ile Ser Gln Leu	Leu Leu Asp Phe Ser	Ile Val Ser Ala Met
435	440	445
Phe Phe Gln Arg Tyr Ile	Leu Thr Leu Gly Asn	Val
450	455	460

<210> 8314
 <211> 224
 <212> PRT
 <213> B.fragilis

<400> 8314
Lys Gln Asn Glu Val Thr Met Asn Asn Gln Ile Gln His Lys Asp Ser
1 5 10 15
Thr Lys Val Pro Glu Pro Thr Leu Arg Leu Pro Trp Tyr Leu Ser
20 25 30
Asn Val Lys Leu Leu Lys Gln Lys Gly Glu Arg Tyr Val Ser Ser Thr
35 40 45
Gln Ile Ser Lys Glu Ile Asn Ile Asp Ala Ser Gln Ile Ala Lys Asp
50 55 60
Leu Ser Tyr Val Asn Ile Ser Gly Arg Thr Arg Val Gly Tyr Glu Val
65 70 75 80
Asp Ala Leu Ile Ala Val Leu Glu Asp Phe Leu Gly Phe Thr Asn Met
85 90 95
His Lys Ala Phe Leu Phe Gly Val Gly Ser Leu Gly Gly Ala Leu Leu
100 105 110
Arg Asp Ser Gly Leu Ser His Phe Gly Leu Glu Ile Val Ala Ala Phe
115 120 125
Asp Val Asn Pro Ser Leu Val Gly Thr Thr Leu Asn Gly Ile Pro Ile
130 135 140
Phe His Ser Asp Asp Phe Gln Lys Lys Met Gln Glu Tyr Gly Val His
145 150 155 160
Ile Gly Val Leu Thr Val Pro Ile Glu Ile Ala Gln Cys Ile Thr Asp
165 170 175
Thr Met Val Ala Gly Gly Ile Lys Ala Val Trp Asn Phe Thr Pro Phe
180 185 190
Arg Ile Arg Val Pro Glu Asp Ile Val Val Gln Asn Thr Ser Leu Tyr
195 200 205
Ala His Leu Ala Val Met Phe Asn Arg Leu Asn Phe Asn Glu Ile Glu
210 215 220

<210> 8315
 <211> 290
 <212> PRT
 <213> B.fragilis

<400> 8315
Glu Asp Ser Asp Met Ala Asn Pro Lys Leu Pro Gly Ile Pro Glu Ala
1 5 10 15
Glu Gln Ala Leu Leu Tyr Ala Lys Leu Asn Glu Tyr Asn Arg Gly Arg
20 25 30

Met Ser Tyr Lys Glu Ala Gly Ala Tyr Phe Val Val Leu Pro Arg Pro
 35 40 45
 Gly His Pro Thr Tyr Ser Val Trp Ile Tyr Ser Pro Thr Leu Glu Lys
 50 55 60
 Asn Arg Leu Leu Phe Ile His Glu Leu Ser Ala Asp Ile Asn Glu Ser
 65 70 75 80
 Leu Arg Met Ala Ser Thr Leu Phe Phe Phe Ser Arg Arg Cys Leu Leu
 85 90 95
 Ile Val Glu Tyr Asn Glu Lys Arg Met Gln Ser Asn Gly Asp Asp Ile
 100 105 110
 Ile Ser Phe Gly Arg Tyr Arg Gly His Tyr Leu His Glu Ile Leu Lys
 115 120 125
 Val Asp Pro Ala Tyr Leu Ser Trp Ile Ala Tyr Lys Tyr Thr Pro Lys
 130 135 140
 Ile Pro Lys Gln Glu Arg Phe Val Ala Ile Ala Gln Val Tyr His Ser
 145 150 155 160
 Val His Leu Asp Ile Met Gln Arg Lys Ala Arg Gln Lys Arg Glu Ala
 165 170 175
 Gly Arg Phe Leu Gly Asn Glu Gly Glu Lys Leu Glu Gly Leu Asn Leu
 180 185 190
 Lys Val Val Arg Val Arg Leu Glu Asp Asp Pro Tyr Lys Thr Arg Val
 195 200 205
 Met Gly Thr Ser Val Gln Phe Val Arg Gln Ile Val Thr Leu Thr
 210 215 220
 Asp Pro Ser Gly Asn Leu Val Val Leu Arg Ile Ser Ser Lys Thr Pro
 225 230 235 240
 Ser Pro Val Ser Cys Gln Leu Pro Ala Leu Glu His Glu Val Arg Pro
 245 250 255
 Gly Glu Ile Val His Ile Ala Ser Ala Arg Ile Ala Arg Thr Tyr Glu
 260 265 270
 Ser Tyr Gly Ser Lys Tyr Thr Arg Leu Ser His Val Lys Phe Leu Ile
 275 280 285
 Gly Thr
 290

<210> 8316

<211> 166

<212> PRT

<213> B.fragilis

<400> 8316

Asn Arg Thr Asp Met Lys Lys Leu Tyr Phe Phe Thr Met Leu Ala Ala
 1 5 10 15
 Met Leu Phe Ala Val Thr Asn Val Met Ala Gln Lys Ala Asn Phe Lys
 20 25 30
 Pro Ala Asn Leu Lys Gly Ile Trp Gln Leu Cys His Tyr Val Ser Glu
 35 40 45
 Ser Pro Asp Ala Pro Gly Val Leu Lys Pro Ser Asn Thr Phe Lys Val
 50 55 60
 Leu Ser Asp Asp Gly Arg Ile Val Asn Phe Thr Ile Arg Pro Gly Ala
 65 70 75 80
 Asp Ala Ile Ile Thr Gly Tyr Gly Ser Tyr Glu Gln Leu Ser Asp His
 85 90 95
 Thr Tyr Ala Glu Ser Ile Glu Lys Asn Ile His Leu Pro Met Leu Asp
 100 105 110
 Asn Gln Asp Asn Val Leu Thr Phe Glu Leu Val Asp Asp Lys Val Leu
 115 120 125
 His Leu Lys Tyr Phe Ile Glu Lys Asp Leu Asn Gly Asn Glu Leu Asn
 130 135 140

Cys Trp Tyr Lys Glu Thr Trp Lys Arg Ile Glu Met Pro Asp Lys Phe
 145 150 155 160
 Pro Glu Asp Ile Val Arg
 165

<210> 8317
 <211> 411
 <212> PRT
 <213> B.fragilis

<400> 8317

Asp Met Gln Asp Thr Leu Ser Leu Tyr Glu Leu Asn Ala Leu Val Arg
 1 5 10 15
 Arg Ser Leu Glu Gln Cys Leu Pro Asp Glu Tyr Trp Val Gln Ala Glu
 20 25 30
 Leu Ser Asp Val Arg Thr Asn Ser Thr Gly His Cys Tyr Leu Glu Phe
 35 40 45
 Val Gln Lys Asp Pro Arg Ser Asn Asn Leu Ile Ala Lys Ala Arg Gly
 50 55 60
 Thr Ile Trp Ala Asn Ile Tyr Arg Leu Leu Lys Pro Tyr Phe Glu Glu
 65 70 75 80
 Ser Thr Gly Gln Leu Phe Thr Ser Gly Ile Lys Val Leu Val Lys Val
 85 90 95
 Thr Val Ala Phe His Glu Leu Tyr Gly Tyr Ser Leu Thr Val Gln Asp
 100 105 110
 Ile Asp Pro Thr Tyr Thr Leu Gly Asp Met Ala Arg Arg Arg Glu
 115 120 125
 Ile Leu Arg Gln Leu Glu Glu Glu Gly Val Leu Thr Leu Asn Lys Glu
 130 135 140
 Leu Glu Met Pro Leu Leu Pro Gln Arg Ile Ala Val Ile Ser Ser Ala
 145 150 155 160
 Thr Ala Ala Gly Tyr Gly Asp Phe Cys His Gln Leu Gln His Asn Pro
 165 170 175
 Arg Gly Phe Tyr Phe Arg Thr Glu Leu Phe Pro Ala Leu Met Gln Gly
 180 185 190
 Asn Gln Val Glu Glu Ser Val Leu Ala Ala Leu Asp Ala Val Asn Ala
 195 200 205
 Arg Val Asp Glu Phe Asp Val Val Val Ile Ile Arg Gly Gly Gly Ala
 210 215 220
 Thr Ser Asp Leu Ser Gly Phe Asp Thr Tyr Leu Leu Ala Ala Ala Cys
 225 230 235 240
 Ala Gln Phe Pro Leu Pro Val Ile Thr Gly Ile Gly His Glu Arg Asp
 245 250 255
 Asp Thr Val Leu Asp Ser Val Ala His Thr Arg Val Lys Thr Pro Thr
 260 265 270
 Ala Ala Ala Glu Leu Leu Ile Asp Arg Met Glu Glu Ala Ala Asp Arg
 275 280 285
 Leu Gly Ala Leu Ala Glu Glu Leu His Thr Arg Val Phe Tyr Arg Leu
 290 295 300
 Glu Gln Glu Arg Arg Arg Leu Ala Leu Leu Gln Ala Arg Ile Pro Ser
 305 310 315 320
 Gln Val Met Arg Lys Leu Ser Glu Ser Arg Ile Lys Leu Gln Met Ala
 325 330 335
 Lys Ser Asn Leu Ser His Ala Ala Glu Thr Leu Leu Ala Arg Gln His
 340 345 350
 His Arg Leu Glu Leu Leu Gln Asn Arg Ile Ala Asp Ala Ser Pro Gln
 355 360 365
 Lys Leu Leu Lys Arg Gly Tyr Ser Ile Thr Leu Lys Asp Gly Lys Ala
 370 375 380

Val Lys Ser Ala Ala Cys Leu Gln Ser Gly Asp Glu Leu Ile Thr Arg
 385 390 395 400
 Leu Tyr Lys Gly Glu Val Lys Ser Arg Val Glu
 405 410

<210> 8318
 <211> 335
 <212> PRT
 <213> B.fragilis

<400> 8318

Asn Ile Lys Asp Ile Met Ala Val Thr Met Ala Asp Ile Thr Lys Leu
 1 5 10 15
 Arg Lys Met Thr Gly Ala Gly Met Met Asp Cys Lys Asn Ala Leu Thr
 20 25 30
 Asp Ala Glu Gly Asp Phe Asp Lys Ala Met Lys Ile Ile Arg Glu Lys
 35 40 45
 Gly Gln Ala Val Ala Ala Lys Arg Ser Asp Arg Glu Ala Ser Glu Gly
 50 55 60
 Cys Val Leu Val Lys Val Glu Glu Gly Phe Gly Ala Ile Ile Ala Leu
 65 70 75 80
 Lys Cys Glu Thr Asp Phe Val Ala Gln Asn Ala Asp Phe Val Lys Leu
 85 90 95
 Thr Gln Asp Ile Leu Asp Ala Ala Val Ala Asn Lys Cys Lys Thr Leu
 100 105 110
 Glu Glu Val Leu Ala Leu Pro Met Gly Asp Ala Thr Val Ala Gln Ala
 115 120 125
 Val Thr Asp Arg Thr Gly Ile Thr Gly Glu Lys Met Glu Leu Asp Gly
 130 135 140
 Tyr Met Val Leu Glu Gly Ala Thr Ile Ala Ala Tyr Asn His Met Asn
 145 150 155 160
 Arg Asn Gly Leu Cys Thr Met Val Ala Phe Asn Lys Lys Val Asp Glu
 165 170 175
 Gln Leu Ala Lys Gln Val Ala Met Gln Val Ala Ala Met Asn Pro Ile
 180 185 190
 Ala Val Asp Glu Asp Gly Val Ser Glu Glu Val Lys Gln Lys Glu Ile
 195 200 205
 Glu Val Ala Val Glu Lys Thr Lys Val Glu Gln Val Gln Lys Ala Val
 210 215 220
 Glu Ala Ala Leu Lys Lys Ala Asn Ile Asn Pro Ala His Val Asp Ser
 225 230 235 240
 Glu Asp His Met Glu Ser Asn Met Ala Lys Gly Trp Ile Thr Ala Glu
 245 250 255
 Asp Val Ala Lys Ala Lys Glu Ile Ile Ala Thr Val Ser Ala Glu Lys
 260 265 270
 Ala Ala Asn Met Pro Glu Gln Met Ile Gln Asn Ile Ala Lys Gly Arg
 275 280 285
 Leu Ala Lys Phe Leu Lys Glu Val Cys Leu Leu Asn Gln Glu Asp Ile
 290 295 300
 Met Asp Ala Lys Lys Ile Val Arg Glu Val Leu Lys Glu Ala Asp Pro
 305 310 315 320
 Glu Leu Lys Val Val Asp Phe Lys Arg Phe Thr Leu Arg Ala Glu
 325 330 335

<210> 8319
 <211> 272
 <212> PRT
 <213> B.fragilis

<400> 8319

Arg	Tyr	Gly	Glu	Ser	Tyr	Ser	Thr	Gly	Tyr	Lys	Gln	Asp	Phe	Thr	Ile
1				5					10					15	
Thr	Ile	Phe	Lys	Lys	Glu	Ile	Met	Lys	Pro	Phe	Ile	Ser	Phe	Cys	Leu
			20					25					30		
Leu	Leu	Cys	Ile	Cys	Leu	Gly	Lys	Leu	Tyr	Ala	Gln	Gly	Val	Asn	Ile
		35					40					45			
Val	Tyr	Ile	Gly	Asn	Ser	Ile	Thr	Gln	Gly	Ala	Leu	Leu	Lys	Thr	Pro
	50					55					60				
Ala	Thr	Glu	Ala	Pro	Pro	Val	Gln	Ala	Ser	Gln	Tyr	Ile	Glu	Gln	Ala
65					70					75					80
Thr	Lys	Gln	Ser	Val	Ala	Phe	Arg	Asn	Cys	Gly	Val	Ser	Gly	Ala	Thr
				85					90					95	
Thr	Leu	Asn	Phe	Leu	Pro	Ile	Ala	Glu	Arg	Gln	Phe	Pro	Asn	Val	Lys
			100					105					110		
Ser	Ala	Ala	Gln	Glu	Leu	Ser	Gln	Arg	Lys	Gly	Thr	Leu	Leu	Phe	Ser
		115					120					125			
Ile	Met	Leu	Gly	Thr	Asn	Asp	Ser	Ala	Cys	Asn	Gly	Pro	Phe	Gly	Ser
	130					135					140				
Pro	Val	Glu	Pro	Val	Ser	Tyr	Tyr	Thr	Asn	Met	Lys	Thr	Ile	Ile	Asp
145					150					155					160
Glu	Leu	Leu	Ser	Leu	Tyr	Pro	Glu	Cys	Lys	Val	Val	Ile	His	Gln	Pro
				165					170					175	
Ile	Trp	Tyr	Ser	Pro	Asn	Thr	Tyr	Asn	Ser	Ala	Met	Tyr	Leu	Ala	Ala
			180					185					190		
Gly	Leu	Lys	Arg	Leu	Lys	Ser	Tyr	Thr	Pro	Met	Ile	His	Lys	Leu	Val
		195					200					205			
Asp	His	Tyr	Ser	Gln	Ala	Asn	Pro	Asn	Gln	Val	Phe	Leu	Gly	Asp	Thr
	210					215					220				
Ala	Ala	Ser	Asp	Phe	Phe	Arg	Asn	Asn	Tyr	Gln	Ser	Tyr	Phe	Thr	Pro
225					230					235					240
Glu	Asn	Gly	Asn	Ala	Gly	Thr	Phe	Tyr	Leu	His	Pro	Asn	Lys	Glu	Gly
				245					250					255	
Ala	Gly	Ile	Leu	Gly	Lys	Tyr	Trp	Ala	Glu	Ala	Ile	Leu	Lys	Ala	Ile
			260					265					270		

<210> 8320

<211> 130

<212> PRT

<213> B.fragilis

<400> 8320

Asp	Ile	Met	Glu	Val	Val	Asn	Ala	Leu	Gly	Arg	Arg	Lys	Arg	Ala	Ile
1				5					10					15	
Ala	Arg	Val	Phe	Val	Ser	Glu	Gly	Thr	Gly	Lys	Ile	Thr	Ile	Asn	Lys
			20					25					30		
Arg	Asp	Leu	Ala	Glu	Tyr	Phe	Pro	Ser	Thr	Ile	Leu	Gln	Tyr	Val	Val
		35					40					45			
Lys	Gln	Pro	Leu	Asn	Lys	Leu	Gly	Val	Ala	Glu	Lys	Tyr	Asp	Ile	Lys
	50					55					60				
Val	Asn	Leu	Cys	Gly	Gly	Gly	Phe	Thr	Gly	Gln	Ser	Gln	Ala	Leu	Arg
65					70					75					80
Leu	Ala	Ile	Ala	Arg	Ala	Leu	Val	Lys	Ile	Asn	Ala	Glu	Asp	Lys	Pro
				85					90					95	
Ala	Leu	Arg	Ser	Glu	Gly	Phe	Met	Thr	Arg	Asp	Pro	Arg	Ser	Val	Glu
			100					105					110		
Arg	Lys	Lys	Pro	Gly	Gln	Pro	Lys	Ala	Arg	Arg	Arg	Phe	Gln	Phe	Ser
		115					120						125		

Lys Arg

130

<210> 8321
 <211> 98
 <212> PRT
 <213> B.fragilis

<400> 8321

Met	Leu	Leu	Leu	Lys	Ile	Phe	Phe	Thr	Thr	Tyr	Gln	Pro	Ser	Pro	Asp
1				5					10					15	
Lys	Gly	Arg	Leu	Thr	Cys	Tyr	Glu	Leu	Ile	Ser	Tyr	Pro	Phe	Glu	Ile
			20					25					30		
Ile	Ile	Gly	Leu	Gln	Lys	Tyr	Gly	Phe	Ser	Leu	Asn	Trp	Gln	Thr	Ile
		35					40					45			
Ser	Val	Phe	Phe	Trp	Ile	Tyr	Pro	Val	Asp	Asn	Glu	Pro	Gln	Ala	Ile
	50					55					60				
Cys	Arg	Lys	Gln	Arg	Pro	Thr	Arg	Gln	Lys	Lys	Thr	Ala	Gly	Asn	Lys
65					70					75					80
Pro	His	Thr	Ile	Asn	Ala	Thr	Ile	His	Asn	Arg	Gln	Leu	Ala	Thr	Cys
				85					90					95	
Ser	Pro														

<210> 8322
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 8322

Ile	Tyr	Thr	Cys	Val	Ser	Leu	Arg	Lys	Cys	Arg	Glu	Glu	Phe	Gly	Asp
1				5					10					15	
Cys	Ile	His	Arg	Phe	Pro	Ile	Val	Leu	Leu	Leu	Leu	Val	Thr	Ala	Phe
			20					25					30		
Arg	Ala	Gln	Lys	Val	Ile	Lys	Val	Gly	Val	Trp	Val	Thr	Ala	Pro	Phe
		35					40					45			
Leu	Arg	Ile	Gly	Lys	Pro	Gly	Val	Met	Glu	Arg	Glu	Asn	Ser	Ala	Phe
	50					55					60				
Lys	Asp	Gly	Lys	Pro	Gly	Ser	Gly	Gly	Gly	Arg	Ala	Gly	Leu	Trp	Gly
65					70					75					80
Lys															

<210> 8323
 <211> 400
 <212> PRT
 <213> B.fragilis

<400> 8323

His	Glu	Val	Cys	Tyr	Ala	Pro	Cys	Ser	Phe	Lys	Val	Cys	Ile	Leu	Thr
1				5					10					15	
Cys	Pro	Ile	Asp	Cys	Ile	Leu	Pro	Gly	Ile	Leu	Tyr	Ile	Cys	Ile	Leu
			20					25					30		
Arg	Lys	Lys	Arg	Met	Asn	Met	Lys	Glu	Ser	Lys	Lys	Arg	Val	Leu	Val
		35					40					45			
Gly	Met	Ser	Gly	Gly	Ile	Asp	Ser	Thr	Ala	Thr	Cys	Leu	Met	Leu	Gln
	50					55					60				
Glu	Gln	Gly	Tyr	Glu	Ile	Val	Gly	Val	Thr	Met	Arg	Val	Trp	Gly	Asp
65					70					75					80
Glu	Pro	Gln	Asp	Ala	Arg	Glu	Leu	Ala	Ala	Arg	Met	Gly	Ile	Glu	His

				85					90					95	
Tyr	Val	Ala	Asp	Glu	Arg	Val	Pro	Phe	Lys	Asp	Thr	Ile	Val	Lys	Asn
			100					105					110		
Phe	Ile	Asp	Glu	Tyr	Arg	Gln	Gly	Arg	Thr	Pro	Asn	Pro	Cys	Val	Met
		115					120					125			
Cys	Asn	Pro	Leu	Phe	Lys	Phe	Arg	Met	Leu	Ile	Glu	Trp	Ala	Asp	Lys
	130					135					140				
Leu	Gly	Cys	Asp	Trp	Ile	Ala	Thr	Gly	His	Tyr	Ser	Arg	Leu	Glu	Glu
145					150					155					160
Arg	Asn	Gly	His	Ile	Tyr	Ile	Val	Ala	Gly	Asp	Asp	Asp	Lys	Lys	Asp
			165						170						175
Gln	Ser	Tyr	Phe	Leu	Trp	Arg	Leu	Gly	Gln	Asp	Val	Leu	Arg	Arg	Cys
			180					185					190		
Ile	Phe	Pro	Leu	Gly	Asn	Tyr	Thr	Lys	Gln	Thr	Val	Arg	Asp	Tyr	Leu
		195					200					205			
Arg	Glu	Lys	Gly	Tyr	Glu	Ala	Lys	Ser	Lys	Glu	Gly	Glu	Ser	Met	Glu
	210					215					220				
Val	Cys	Phe	Ile	Lys	Gly	Asp	Tyr	Arg	Asp	Phe	Leu	Arg	Glu	Gln	Cys
225					230					235					240
Pro	Glu	Leu	Asp	Ala	Glu	Val	Gly	Pro	Gly	Trp	Phe	Val	Ser	Ser	Glu
				245					250						255
Gly	Val	Lys	Leu	Gly	Gln	His	Lys	Gly	Phe	Pro	Tyr	Tyr	Thr	Ile	Gly
		260						265					270		
Gln	Arg	Lys	Gly	Leu	Glu	Ile	Ala	Leu	Gly	Lys	Pro	Ala	Tyr	Val	Leu
		275					280					285			
Lys	Ile	Asn	Pro	Gln	Lys	Asn	Thr	Val	Met	Leu	Gly	Asp	Ala	Gly	Gln
	290					295					300				
Leu	Arg	Ala	Glu	Tyr	Met	Val	Ala	Glu	Gln	Asp	Asn	Ile	Val	Asp	Glu
305					310					315					320
Asp	Glu	Leu	Phe	Ala	Cys	Pro	Asp	Leu	Ala	Val	Arg	Ile	Arg	Tyr	Arg
				325					330					335	
Ser	Arg	Pro	Ile	Pro	Cys	Arg	Val	Lys	Arg	Leu	Glu	Asp	Gly	Arg	Leu
		340						345					350		
Leu	Val	Arg	Phe	Leu	Ala	Glu	Ala	Ser	Ala	Ile	Ala	Pro	Gly	Gln	Ser
		355					360					365			
Ala	Val	Phe	Tyr	Glu	Gly	Arg	Arg	Val	Leu	Gly	Gly	Ala	Phe	Ile	Ala
	370					375					380				
Ser	Gln	Arg	Gly	Ile	Gly	Leu	Val	Ile	Glu	Gln	Asn	Lys	Asp	Trp	Lys
385					390					395					400

<210> 8324
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 8324
 Gln Thr Ser Cys His Gly Asn Val Ser Tyr Ile Ser Met Asn Arg Thr
 1 5 10 15
 Leu Val Glu Arg Cys Phe Cys Leu Ser Val Asn Leu Ile Ser Glu Pro
 20 25 30
 Pro Tyr Ile Ser Val Phe Arg Ala Asp Gly Lys Leu Arg Lys Lys Lys
 35 40 45
 Arg Pro Thr Arg Asn Gln Pro Ile Ile Leu Leu Ala Ala Asn Arg Thr
 50 55 60
 Ile Thr Ile Gln
 65

<210> 8325
 <211> 337

<212> PRT

<213> B.fragilis

<400> 8325

Tyr Asn Ile Arg Ile Glu Gly Met Lys Val Ser Phe Ser Met Ile Phe
 1 5 10 15
 Glu Lys Ala Thr Asp Pro Phe Ile Lys Ser Val Ile Lys Ala Ala Glu
 20 25 30
 Thr Ala Ile Leu Ser His Val Gly Lys Glu Val Glu Ile Val Gly Asn
 35 40 45
 Ile Ser Val Lys Thr Val Gln Ala Ala Arg Pro Glu Val Gly Lys Leu
 50 55 60
 Leu Pro His Val Lys Asn Ile Ile Gly Ile Ser Ser Gly Lys Gly Gly
 65 70 75 80
 Val Gly Lys Ser Thr Val Ser Ala Asn Leu Ala Val Ala Leu Ala Lys
 85 90 95
 Leu Gly Tyr Lys Val Gly Leu Leu Asp Ala Asp Val Phe Gly Pro Ser
 100 105 110
 Met Pro Lys Met Phe Gln Val Glu Asp Ala Arg Pro Tyr Ala Glu Lys
 115 120 125
 Ile Asp Gly Arg Asp Met Ile Ile Pro Val Glu Lys Tyr Gly Val Lys
 130 135 140
 Leu Leu Ser Ile Gly Phe Phe Val Asp Pro Asp Gln Ala Thr Leu Trp
 145 150 155 160
 Arg Gly Gly Met Ala Ser Asn Ala Leu Lys Gln Leu Ile Gly Asp Ala
 165 170 175
 Ala Trp Gly Asp Leu Asp Tyr Phe Leu Ile Asp Leu Pro Pro Gly Thr
 180 185 190
 Ser Asp Ile His Leu Thr Val Val Gln Thr Leu Ala Leu Thr Gly Ala
 195 200 205
 Val Val Val Ser Thr Pro Gln Ala Val Ala Leu Ala Asp Ala Arg Lys
 210 215 220
 Gly Ile Asn Met Phe Thr Asn Asp Lys Val Asn Val Pro Ile Leu Gly
 225 230 235 240
 Leu Val Glu Asn Met Ala Trp Phe Thr Pro Ala Glu Leu Pro Glu Asn
 245 250 255
 Lys Tyr Tyr Leu Phe Gly Lys Glu Gly Ala Lys Lys Leu Ala Glu Glu
 260 265 270
 Met Asn Val Pro Leu Leu Gly Gln Ile Pro Ile Val Gln Ser Ile Cys
 275 280 285
 Glu Gly Gly Asp Lys Gly Thr Pro Val Ala Leu Asp Glu Asn Thr Val
 290 295 300
 Thr Gly Arg Ala Phe Leu Ala Leu Ala Ala Ser Val Val Arg Gln Val
 305 310 315 320
 Asp Lys Arg Asn Val Glu Met Ala Pro Thr Lys Ile Val Glu Leu His
 325 330 335
 Lys

<210> 8326

<211> 861

<212> PRT

<213> B.fragilis

<400> 8326

Leu Lys Asn Arg Lys Thr Met Asn Trp Gly Ile His Asp Arg Arg Gly
 1 5 10 15
 Trp Met Ala Val Val Leu Leu Leu Cys Ala Tyr Pro Phe Ser Ala Gln
 20 25 30

Asn Thr Gly Gln Ile Thr Leu Glu Leu Arg Asn Lys Pro Leu Pro Ala
 35 40 45
 Val Leu Lys Leu Ile Glu Lys Ala Gly Glu Lys His Ile Ile Phe Ser
 50 55 60
 Tyr Asn Glu Thr Glu Thr Tyr His Val Thr Ala Ser Ile His Gln Arg
 65 70 75 80
 Asn Glu Ser Glu Ala Leu Ser Ile Val Leu Lys Ser Thr Pro Phe Ile
 85 90 95
 Tyr Lys Glu Arg Glu Asn Tyr Phe Val Ile Gln Lys Gly Ser Ile Asp
 100 105 110
 Lys Arg Leu Ile Thr Ile Arg Gly Ser Val Ile Asp Glu Asn Asn Glu
 115 120 125
 Pro Leu Val Cys Ala Asn Val Leu Leu Leu Asp Lys Ala Asp Ser Ala
 130 135 140
 Phe Val Asn Gly Val Val Thr Asn Gln Asp Gly Ser Phe Arg Ile Pro
 145 150 155 160
 Gly Glu Glu Gly Arg Asp Tyr Leu Leu Lys Thr Ser Tyr Ile Gly Tyr
 165 170 175
 Gln Thr Lys Ile Gln Pro Cys Gly Ala Met Asn Lys Val Cys Leu Phe
 180 185 190
 Ser Asp Thr Gln Leu Met Lys Glu Val Val Ile Ser Val Asp His Pro
 195 200 205
 Leu Ile Val His Lys Asp Asn Gly Leu Leu Ala Asn Val Val Gly Thr
 210 215 220
 Pro Leu Ala Lys Met Gly Ser Ala Ala Glu Met Ile Ser His Leu Pro
 225 230 235 240
 Phe Val Thr Gly Gly Val Gly Glu Tyr Met Val Leu Gly His Gly Val
 245 250 255
 Pro Val Ile Tyr Ile Asn Gly Arg Lys Ile Arg Asp Gln Gly Glu Leu
 260 265 270
 Glu Arg Leu Arg Ala Asp Asp Ile Leu Ser Ala Glu Val Ile Thr Thr
 275 280 285
 Pro Gly Val Glu Tyr Gly Ser Asp Val Ser Ser Val Ile Arg Ile Arg
 290 295 300
 Thr Ile Arg Arg Arg Gly Gln Gly Ile Ser Ser Gly Phe Arg Gly Val
 305 310 315 320
 Phe Ser Gln Gly His Asp Tyr Asn Ala Ser Glu Asn Leu Tyr Leu Asn
 325 330 335
 Tyr Arg Thr Gly Glu Leu Asp Leu Phe Val Lys Gly Asp Leu Lys His
 340 345 350
 Gly Asn Tyr Tyr Gln Glu Ser Ile Leu Asn Gln Glu Thr Asp Ala Ser
 355 360 365
 Ser Arg Trp Glu Val Lys Gly Gly Ala Thr Ser Phe His Lys Ala Val
 370 375 380
 Tyr Phe Ser Gly Glu Val Gly Phe Asn Tyr Glu Leu Asp Asp Lys Asn
 385 390 395 400
 Ser Leu Gly Ala Arg Tyr Met Pro Gly Ala Asn Val Gly Ser Val Asn
 405 410 415
 Arg Thr Asn Leu Gly Asn Asn Phe Val Tyr Lys Asp Gly Glu Lys Ile
 420 425 430
 Glu Glu Ile Ser Ser Leu Gln His Ala His Thr Tyr Pro Thr Trp Thr
 435 440 445
 His Ser Val Asn Gly Tyr Tyr Asn Gly Val Phe Gly Gln Trp Asn Val
 450 455 460
 Asp Phe Asn Ala Asp Tyr Leu Leu Gly Lys Asn Asn Ser Thr Asn Glu
 465 470 475 480
 Val Phe Asn Asn Asp Asp Lys Ala Ala Gln Ser Glu Asn Glu Val Arg
 485 490 495
 Asn Tyr Leu Tyr Ala Met Arg Met Val Val Lys Arg Ser Phe Arg Lys

500					505					510					
Gly	Thr	Leu	Ser	Phe	Gly	Thr	Glu	Glu	Thr	Phe	Thr	Asn	Arg	His	Asp
515					520					525					
Val	Phe	Val	Gln	Ser	Gly	Phe	Ser	Asp	Asn	Ala	Asp	Asp	His	Ile	Lys
530					535					540					
Gln	Ser	Ile	Tyr	Ser	Val	Phe	Ala	Asp	Tyr	Ser	Leu	His	Leu	Asp	Lys
545					550					555					
Phe	Asn	Val	Ala	Val	Gly	Leu	Arg	Tyr	Glu	His	Gln	Lys	Thr	Asp	Tyr
565					570					575					
Tyr	Glu	Tyr	Gly	Val	His	Gln	Asp	Glu	Gln	Ser	Pro	Val	Tyr	Asn	Asp
580					585					590					
Ile	Val	Pro	Val	Ala	Leu	Val	Gly	Tyr	Glu	Asp	Lys	Gly	Trp	His	Ala
595					600					605					
Ser	Leu	Ser	Tyr	Arg	Leu	Ile	Arg	Asn	Asn	Pro	Asp	Tyr	His	Met	Leu
610					615					620					
Ser	Ser	Ser	Ile	Thr	Tyr	Ser	Ser	Lys	Tyr	Met	Tyr	Arg	Ser	Gly	Asp
625					630					635					
Pro	Leu	Leu	Val	Pro	Gln	Lys	His	His	Val	Phe	Ile	Leu	Asp	Ala	Gly
645					650					655					
Ser	Arg	Trp	Ala	Phe	Val	Asn	Leu	Phe	Phe	Asp	Arg	Thr	Leu	Asp	Leu
660					665					670					
Tyr	Thr	Arg	Phe	Leu	Lys	Pro	Tyr	Asn	Asp	Glu	Thr	His	Pro	Gly	Val
675					680					685					
Leu	Leu	Phe	Thr	Met	Ala	Ser	Ile	Pro	Thr	Thr	Asp	Thr	Tyr	Gly	Met
690					695					700					
Asn	Leu	Asn	Val	Ser	Pro	Lys	Ile	Gly	Cys	Trp	Gln	Pro	Gln	Leu	Asn
705					710					715					
Gly	Gly	Met	Tyr	Phe	Tyr	Asp	Ala	Asp	Val	Arg	Ser	Leu	Gly	Ile	Thr
725					730					735					
Arg	His	Trp	Asn	Glu	Pro	Gln	Phe	Tyr	Phe	Glu	Leu	Asp	Asn	Ser	Phe
740					745					750					
Thr	Phe	Pro	Asp	Gly	Trp	Phe	Leu	Asn	Val	Asn	Gly	Asn	Ile	Ser	Thr
755					760					765					
Ala	Ala	Lys	Gln	Ser	Tyr	Ser	Leu	Ile	His	Arg	Glu	Gly	Thr	Val	Asn
770					775					780					
Ala	Arg	Leu	Ser	Lys	Ser	Phe	Leu	Glu	Asp	Ala	Leu	Met	Ile	Thr	Leu
785					790					795					
Thr	Ala	Asp	Asp	Ile	Phe	His	Thr	Arg	Tyr	His	Tyr	Met	Asp	Gly	Tyr
805					810					815					
Gly	Val	Arg	Ser	His	Ile	Leu	Thr	Arg	Ser	Tyr	Asn	Asp	Asn	Gln	Arg
820					825					830					
Phe	Gly	Ile	Gln	Ile	Ser	Tyr	Lys	Phe	Asn	Ala	Thr	Lys	Ser	Lys	Tyr
835					840					845					
Lys	Gly	Thr	Gly	Ala	Gly	Gln	Ser	Glu	Lys	Gln	Arg	Leu			
850					855					860					

<210> 8327
 <211> 188
 <212> PRT
 <213> B.fragilis

<400> 8327
 Phe Cys Trp Leu Met Ala Lys Leu Thr Ile Phe Arg Phe Arg Gly His
 1 5 10 15
 Ile Ser Arg Glu Arg Phe Arg Gln Leu Phe Val Glu Ile Tyr Pro
 20 25 30
 Arg Leu Leu Arg Tyr Ala Ile Gln Leu Met Ser Asp Arg Glu Glu Ala
 35 40 45
 Lys Asp Ile Val Gly Glu Val Met Glu Glu Ala Trp Lys Cys Phe Asp

50 55 60
 Arg Leu Glu Ala Glu Thr Gln Asn Ala Tyr Phe Tyr Thr Ala Thr Arg
 65 70 75 80
 Asn Thr Cys Leu Asn Arg Leu Lys His Leu Arg Val Glu Gln Gln His
 85 90 95
 Leu Asp Thr Leu Arg Glu Val Thr Arg Met Asp Val Asn Thr Gly Tyr
 100 105 110
 Arg Gln His Glu Ala Gln Leu Gln Gln Ala Glu Thr Ile Ala Cys Ser
 115 120 125
 Leu Ser Glu Pro Thr Arg Thr Ile Leu Arg Leu Cys Tyr Trp Glu Lys
 130 135 140
 Leu Thr Tyr Arg Gln Val Ala Glu Arg Leu Glu Ile Ser Pro Asp Thr
 145 150 155 160
 Val Lys Lys His Ile Ser Lys Ala Leu Arg Ile Leu Arg Asn Glu Met
 165 170 175
 Asn Gly Lys Glu Glu Thr Asn Gly Thr Glu Arg Gly
 180 185

<210> 8328
 <211> 153
 <212> PRT
 <213> B.fragilis

<400> 8328
 Cys Pro Ala Arg Arg Arg Lys Trp Arg Ile Lys Glu Ser Tyr Leu Val
 1 5 10 15
 Cys Ser Ala Gly Asn Ser Gly Ala Ser Ser Trp Lys Lys Ile Thr Thr
 20 25 30
 Pro Gly Asp Ala Glu Asn Val Leu Thr Val Gly Ala Ile Asp Arg Arg
 35 40 45
 Gly Val Leu Ala Ser Phe Ser Ser Ile Gly Asn Thr Ala Asp Asn Arg
 50 55 60
 Val Lys Pro Asp Val Val Ala Val Gly Leu Asn Ser Asp Val Met Gly
 65 70 75 80
 Thr Asn Gly Asn Leu Arg Lys Ala Ser Gly Thr Ser Phe Ala Ser Pro
 85 90 95
 Ile Leu Cys Gly Met Val Thr Cys Leu Trp Gln Ala Cys Pro Gln Leu
 100 105 110
 Thr Ala Lys Glu Ile Ile Glu Leu Val Arg Gln Ser Gly Asp Arg Val
 115 120 125
 Asp Phe Pro Asp Asn Ile Tyr Gly Tyr Gly Val Pro Asp Leu Trp Lys
 130 135 140
 Ala Tyr Gln Ser Val Ser Lys Lys Lys
 145 150

<210> 8329
 <211> 80
 <212> PRT
 <213> B.fragilis

<400> 8329
 Val Leu Arg Ser Glu Asp Glu Thr Ser Glu His Leu Val Glu Gln Asp
 1 5 10 15
 Tyr Leu Ala Ala Val Glu Phe Ala Asp Ser Val Gly Val Asp Val
 20 25 30
 Val Asn Thr Ser Leu Gly Tyr Phe Thr Phe Asp Asp Ser Thr Lys Asn
 35 40 45
 Tyr Lys Tyr Arg Asp Leu Asp Gly His His Ala Leu Met Ser Arg Gln
 50 55 60

Ala Ser Lys Met Ala Asp Lys Gly Ile Val Leu Gly Val Gln Cys Arg
 65 70 75 80

<210> 8330
 <211> 590
 <212> PRT
 <213> B.fragilis

<400> 8330

Glu Arg Thr Arg Lys Ile Ile Ala Asn Thr Leu Lys Asn Met Thr Pro
 1 5 10 15
 Glu Leu Ala Tyr Phe Leu Lys Ile Asn Ile Ala Ile Ala Leu Phe Tyr
 20 25 30
 Ala Phe Tyr Arg Leu Phe Phe Tyr Arg Asp Thr Phe Phe Gln Trp Arg
 35 40 45
 Arg Thr Ala Leu Leu Cys Phe Leu Val Ile Ser Pro Leu Tyr Pro Val
 50 55 60
 Leu Asn Ile Gln Glu Trp Ile Arg Ser His Glu Pro Met Val Ala Met
 65 70 75 80
 Val Asp Leu Tyr Ala Thr Ile Val Leu Pro Glu Ile Glu Ile Thr Pro
 85 90 95
 Glu Val Arg Ala Ala Asp Trp Gln Ser Ile Ile Leu Ser Thr Val Asn
 100 105 110
 Ile Ile Tyr Trp Ser Gly Val Thr Leu Leu Leu Val Arg Phe Phe Ala
 115 120 125
 Gln Leu Ala Ser Ile Leu Arg Leu Arg Cys Arg Lys Asp Gln
 130 135 140
 Ile Glu Gly Ile Pro Val Tyr Leu Leu Asp Lys Glu Ser Gly Pro Phe
 145 150 155 160
 Ser Phe Phe His Trp Ile Phe Ile Tyr Pro Gln Ala His Pro Gln Asn
 165 170 175
 Glu Leu Ser Glu Ile Leu Thr His Glu Gly Thr His Ala Arg Gln Arg
 180 185 190
 His Ser Ile Asp Val Ile Ile Ser Glu Leu Met Cys Ile Ala Cys Trp
 195 200 205
 Phe Asn Pro Phe Met Trp Leu Met Lys Arg Glu Val Arg Asn Asn Leu
 210 215 220
 Glu Tyr Met Ala Asp Asn Arg Val Leu Glu Ala Gly His Asp Ser Lys
 225 230 235 240
 Ser Tyr Gln Tyr His Leu Leu Gly Leu Ala His Gln Lys Ser Ala Ile
 245 250 255
 Thr Leu Ser Asn Ser Phe Asn Val Leu Pro Leu Lys Asn Arg Ile Thr
 260 265 270
 Met Met Asn Lys Lys Arg Thr Lys Glu Ile Gly Arg Thr Lys Tyr Leu
 275 280 285
 Leu Phe Ile Pro Leu Ala Leu Ala Leu Met Ile Val Ser Asn Ile Glu
 290 295 300
 Ala Val Ala Arg Thr Thr Lys Ser Ile Ala Gln Glu Val Met Gln Thr
 305 310 315 320
 Val Glu Glu Gln Ile Glu Pro Glu Asn Ala Val Ala Val Lys Glu Ser
 325 330 335
 Thr Ser Ser Pro Gln Ala Ala Asn His Ile Ser Gln Pro Gln Glu Ser
 340 345 350
 Gly Ile Ala Glu Gln Pro Ala Gln Glu Glu Ser Gln Glu Ile Val
 355 360 365
 Phe Glu Val Val Glu Lys Met Pro Glu Phe Pro Gly Gly Val Arg Asn
 370 375 380
 Met Asn His Phe Ile Asn Ser His Leu Arg Tyr Pro Val Ile Ala Gln
 385 390 395 400

Glu Asn Gly Thr Gln Gly Gln Val Ile Ala Gln Phe Val Ile Gln Ala
 405 410 415
 Asp Gly Thr Leu Ser Asp Leu Lys Ile Val Lys Ser Val Asp Pro Leu
 420 425 430
 Leu Asp Ala Glu Ala Met Arg Val Ile Lys Glu Met Pro Lys Trp Gln
 435 440 445
 Pro Gly Lys Gln Arg Gly Ile Ala Val Ala Thr Arg Val Thr Val Pro
 450 455 460
 Ile Arg Phe Arg Leu Met Asp Ser Asp Ser Ala Pro Ser Thr Asp Ser
 465 470 475 480
 Asn Lys Asn Gln Glu Asn Thr Ile Phe Asp Val Val Glu Arg Ala Pro
 485 490 495
 Glu Phe Pro Gly Gly Met Glu Ala Cys Leu Lys Tyr Met Tyr Lys Asn
 500 505 510
 Ile Lys Tyr Pro Ala Val Ala Met Glu Ala Gly Ile Gln Gly Gln Val
 515 520 525
 Val Ile Gln Ile Val Ile Asp Lys Asp Gly Lys Ile His Asp Pro Lys
 530 535 540
 Ile Val Arg Gly Val Ser Pro Glu Leu Asn Ala Glu Ala Val Arg Val
 545 550 555 560
 Ile Ser Asn Met Pro Gln Trp Ile Pro Gly Lys Gln Lys Gly Lys Asn
 565 570 575
 Val Ala Thr Arg Phe Thr Leu Pro Val Arg Phe Arg Leu Ala
 580 585 590

<210> 8331
 <211> 319
 <212> PRT
 <213> B.fragilis

<400> 8331

Thr Glu Arg Arg Lys Gln Met Glu Gln Arg Glu Asp Asn Lys Asn Asp
 1 5 10 15
 Ile Ala Ser Cys Arg Leu Lys Asn Leu Phe Gly Glu Ala Leu Gly Asp
 20 25 30
 Leu Ser Ser Val Glu Glu Thr Glu Thr Ala Trp Gln Ala Phe Ala Ser
 35 40 45
 Arg Arg Arg Gln Glu Arg Val Arg Thr Leu Val Phe Gly Phe Ala Ala
 50 55 60
 Val Ala Ser Val Ala Leu Leu Phe Trp Gly Phe Ser Gln Glu Asn
 65 70 75 80
 Phe Leu Ser Gln Glu Val Glu Val Phe Ala Ser Val Asn Ser Pro Asp
 85 90 95
 Lys Leu Val Met Thr Glu Asp Lys Gly Ile Ile Ala Val Arg Thr Pro
 100 105 110
 Pro Ala Thr Thr Ile Thr Ile His Leu Pro Asp Ser Thr Glu Val Leu
 115 120 125
 Leu Asn Ala Asn Ser Arg Leu Glu Tyr Pro Lys Ala Phe Thr Gly Asp
 130 135 140
 Leu Arg Arg Val Met Leu Glu Gly Ala Ala Arg Phe Asn Val Gln Arg
 145 150 155 160
 Asp Thr Leu His Pro Phe Ile Val Glu Thr Gly Ser Leu Gln Thr Arg
 165 170 175
 Val Leu Gly Thr Val Phe Asp Val Asp Ser Tyr Gly Cys Gly Thr Thr
 180 185 190
 Ser Lys Val Val Leu Tyr Glu Gly Ser Val Gln Val Ser Asp Lys Ala
 195 200 205
 Asn Thr Lys Ala Cys Lys Ile Lys Pro Gly Glu Gln Val Tyr Leu Asp
 210 215 220

Arg Val Gly Asp Ile Cys Ile Ser Gln Ala Asp Ile Cys Met Gln Lys
 225 230 235 240
 Ser Trp Thr Glu Gly Leu Phe Ile Phe Asp Asn Val Thr Leu Arg Tyr
 245 250 255
 Val Met Gln Glu Ile Gly Ala Trp Tyr Asn Thr Asn Ile Val Phe Arg
 260 265 270
 Ser His Pro Leu Leu Glu Glu Arg Ile Tyr Phe Ser Ala Ser Arg His
 275 280 285
 Leu Pro Val Gly Glu Ile Leu Asn Val Leu Asn Asp Leu Gln Ile Ala
 290 295 300
 Arg Phe Ile Val Glu Gly Asp Lys Ile Val Val Ser Pro Leu Ser
 305 310 315

<210> 8332

<211> 526

<212> PRT

<213> B.fragilis

<400> 8332

Arg Leu Tyr Gly Lys Ile Asp Val Ala Val Ser Val Thr Leu Pro Gln
 1 5 10 15
 Pro Glu Ser Val Asn Thr Leu Thr Arg Ala Gly Gly Pro Tyr Thr Asp
 20 25 30
 Thr Asp Ile Lys Asn Ala Asp Leu Ile Phe Asp Lys Asp Ala Lys
 35 40 45
 Phe Met Glu Arg Val Lys Val Asp Asn Asp Arg Leu Val Val Thr Gly
 50 55 60
 Thr Gly Ile Asn Phe Thr Val Arg Leu Asp Ala Thr Ser Glu Arg Arg
 65 70 75 80
 Ile Ile His Leu Val Ala Asn Gly Arg Ser Ala Asp Gly Thr Ser Asp
 85 90 95
 Arg Leu Asn Phe Gly Gly Ile Thr Pro Gly Met Ala Glu Asn Ala Ala
 100 105 110
 Ile Ser Ser Leu Gln Thr Ala Ser Leu Glu His Val Asp Glu Gly Glu
 115 120 125
 Ser Thr Leu Leu Asn His Val Met Pro Leu Val Met Trp Gly Arg Phe
 130 135 140
 Ala Leu Asn Gly Ile Asn Ile Val Thr Lys Ala Glu Gly Val Lys Leu
 145 150 155 160
 Leu Arg Ser Thr Ala Cys Ile Gln Val Lys Lys Gly Asn Gly Gly Gly
 165 170 175
 Asn Thr Gly Leu Gly Asp Phe Val Ile Glu Gly Ile Thr Val His Gln
 180 185 190
 Gly Ala Cys His Gly Phe Leu Ala Pro Thr Asp Cys Thr Gly Glu Val
 195 200 205
 Asn Thr Pro Val Val Ala Asn Pro Val Thr Gly Gly Thr Tyr Leu Asp
 210 215 220
 Tyr Arg Lys Gly Trp Val Asn Gly Ala Glu Pro Ser Leu Tyr Ile Tyr
 225 230 235 240
 Glu Arg Asn Cys Ser Ala Ser Asp Tyr Met Gly Val Val Ile Ala Ala
 245 250 255
 Arg Tyr Lys Gly Lys Lys Gly Tyr Tyr Lys Val Val Met Asn Gly Asn
 260 265 270
 Asp Gly Ser Pro Leu Asn Ile Val Arg Asn His Arg Tyr Ile Val Thr
 275 280 285
 Val Val Gly Val Asn Gly Pro Gly Tyr Glu Ser Pro Asp Ile Ala Val
 290 295 300
 Ala Ser Ala Pro Ser Asn Ala Leu Lys Val Glu Leu Thr Asp Glu Asp
 305 310 315 320

Thr Asp Leu Pro Cys Ile Val Ala Asp Gly Gln Tyr Arg Met Ala Ser
 325 330 335
 Ser Asn Asn Val Phe Ser Leu Tyr Gly Lys Thr Gly Val Thr Thr Ser
 340 345 350
 Ala Thr Gly Val Asp Ile Cys Thr Val Tyr Ser Ser Arg Gly Ile Gln
 355 360 365
 Pro Val Leu Thr Leu Pro Asp Asp Cys Asn Trp Leu Thr Asn Leu Ser
 370 375 380
 Ala Gln Ala Leu Gly Ser Asn Lys Tyr Lys Ile Thr Gly Asp Phe Thr
 385 390 395 400
 Ser Ala Ala Asn Asp Ala Val Ala Thr Thr Leu Thr Met Thr Cys Asp
 405 410 415
 Asn Leu Ser Gln Pro Val Arg Val Ser Trp Asn Pro Ile Ile Ser Asp
 420 425 430
 Gln Lys Asp Ile Asp Ser Phe Val Leu Asp Leu Val Gly Ser Thr Asp
 435 440 445
 Arg Asn Trp Thr Val Arg Val Leu Asn Pro Thr Ser Pro Gly Trp Leu
 450 455 460
 Phe Leu His Pro Ser Ala Ala Ser Pro Gly Ala Leu Pro Gly Asp Gly
 465 470 475 480
 Met Val Ser Glu Leu Ser Ser Lys Tyr Ser Ser His Ala Tyr Leu His
 485 490 495
 Val Ala Phe Gly Ala Asn Arg Arg Gly Thr Val Gln Met Thr Ser Ala
 500 505 510
 Ser Gly Gly Glu Thr Val Ala Arg Lys Ile Val Val Ile Gln
 515 520 525

<210> 8333

<211> 431

<212> PRT

<213> B.fragilis

<400> 8333

Thr Phe Ser Gly Ile Pro His Ala Cys Lys Pro Pro Ser Leu His Cys
 1 5 10 15
 Ser Ser Ser Glu Arg His Lys Ala Pro Leu Tyr Gly His Asp Val Arg
 20 25 30
 Glu Ile Thr Pro His Ile Pro His Arg Ser Asp Arg Val Pro Thr Gly
 35 40 45
 Gly His Ser Gly Glu Thr Asp Pro Lys His Arg Tyr Arg Thr Ala Leu
 50 55 60
 Cys Val Pro Pro Leu Gln Gln Ala Gly Lys Ala His Ala Leu Pro Val
 65 70 75 80
 Ile Pro Tyr Arg Lys His Cys Phe Pro Arg Gly Leu Leu Phe Cys Ser
 85 90 95
 Ser Phe Ile Glu Arg Leu Phe Asn Asn Ser His Pro Ser Val Ser Ile
 100 105 110
 Gly Phe Val Thr Ile Leu Asp Ala Thr Gln Phe Ile Ile Lys Leu Leu
 115 120 125
 Thr Asn Arg Ser Arg Leu Ser Ile Phe Arg Asn His Ile Arg Leu Ala
 130 135 140
 Ile Leu Lys Val Val Asn Thr Phe Asp Arg Thr Asp Asn Gly Ser Ser
 145 150 155 160
 Thr Thr Ser Ser Arg Phe Phe Glu Ser Ala Gln Leu Phe Phe Gly Tyr
 165 170 175
 Arg Thr Ala Leu Tyr Phe His Ala His Ile Phe Arg Gln Leu His Gln
 180 185 190
 Ala Leu Ile Gly Asp Gly Arg Lys Asp Gly Ser Arg Leu Arg Ser Asp
 195 200 205

Val Gly Ile Val Phe Asn Thr Lys Glu Val Gly Arg Thr Thr Phe Val
 210 215 220
 Asn Val Phe Phe Ile Phe Cys Val Gln Ile Glu Leu Ala Gly Ile Thr
 225 230 235 240
 Gln Val Val Ser Leu Leu Ile Gly Ala Gln Thr Gly Cys Ile Val Ser
 245 250 255
 Thr Asp Phe Val Asp Thr Gly Ser Val Arg Arg Ser Thr Val Val Leu
 260 265 270
 Ala Asp Asn Asp Ile Arg Ile Gly Arg Glu Ala Thr Leu Glu Ile Arg
 275 280 285
 Thr Asp Arg Cys Asp Lys Tyr Asn Lys His Ile Phe Ile Cys Arg Met
 290 295 300
 Asp Thr His Leu Gly Thr Gly Ser Asp Lys Gln Arg Ala Asn Val Lys
 305 310 315 320
 Arg Ser Ser Thr Leu Val Arg Arg Asn Lys Ala Phe Val Gln Phe Tyr
 325 330 335
 His Phe Gln Asp Ser Phe Leu Glu Thr Phe Arg Arg Gln Phe Ser His
 340 345 350
 His Asp Ala Leu Thr Gly Gly Leu Gln Thr Arg Ser Ile Leu Leu Gln
 355 360 365
 Thr Glu Asn Thr His Phe Ala Val Phe Thr Thr Glu Ser Phe Gln Thr
 370 375 380
 Leu Glu Gly Phe Leu Thr Ile Met Gln Ala Ser Gly Ser His Val Gln
 385 390 395 400
 Val Gln His Leu Ala Thr Ala Tyr Phe Glu Phe Ala Pro Cys Ala Val
 405 410 415
 Thr Glu Ile Asp Ser His Ile Val Val Cys Leu His Ile Thr Glu
 420 425 430

<210> 8334

<211> 301

<212> PRT

<213> B.fragilis

<400> 8334

Cys Val Leu Gly Gly Ile Val Leu Phe Cys Ser Val Leu Phe Leu Tyr
 1 5 10 15
 Leu Arg Lys Lys Tyr Glu Ser Ile Lys Lys Asp Ala Ser Val Leu Ile
 20 25 30
 Ala Gly Leu Val Val Ala Ser Cys Ala Asn Asp Leu Asp Gly Phe Ile
 35 40 45
 Ser Ile Pro Asp Asn Ala Thr Gly Val Gln Gln Ile Ser Thr Arg Ser
 50 55 60
 Ser Ser Asp Asn Leu Lys Ile Val Tyr His Gly Lys Val Tyr Glu Thr
 65 70 75 80
 Leu Tyr Thr Ile Ile Asp Asp Ser Ile Tyr Ser Tyr Gln Asn Ser Glu
 85 90 95
 Val Lys Asp Leu Met Asp Asn Leu Ser Glu Thr Arg Pro Asn Leu Arg
 100 105 110
 Thr Phe Ile His Gly Asn Gly Val Ile Glu Tyr Phe Asp Asp Glu Asn
 115 120 125
 Asp Phe Asn Leu Asn Lys Glu Arg Ile Met Ser Glu Tyr Glu Lys Glu
 130 135 140
 Ser Leu Ser Thr Ser Leu Ser Glu Arg Trp Phe Pro Thr Asp Asn Val
 145 150 155 160
 Pro Gln Leu Ala Pro Ile Asp Pro Glu Asn Asn Glu Val Glu Ile Tyr
 165 170 175
 Leu Tyr Glu Asp Pro Tyr Tyr Leu Gly Asp Leu Phe Ser Leu Gln Arg
 180 185 190

Asn	Arg	Ser	Asp	Ser	Asp	Tyr	Asn	Glu	Leu	Ser	Lys	Val	Trp	Asn	Phe
	195						200					205			
Gly	Gly	Gln	Ile	Leu	Ser	Met	Ile	Val	His	Thr	Ile	Gly	Phe	Gly	Gly
	210					215					220				
Val	Phe	Thr	Phe	Tyr	Glu	Arg	Met	Gly	Cys	Gln	Gly	Lys	Gly	Ile	Thr
225					230					235					240
Leu	Val	Leu	Thr	Ala	Gly	Gln	Tyr	Ile	Asn	Leu	Cys	Ser	Glu	Leu	Ser
				245					250					255	
Ala	Asp	Ala	Met	Arg	Gly	Ile	Ser	Tyr	Gly	Ser	Ile	Ala	Met	Ser	Asp
			260					265					270		
Leu	Arg	Ser	Leu	His	Trp	Ser	Gly	Ile	Ala	Gly	Asn	Trp	Asn	Asn	Arg
		275					280					285			
Ile	Cys	Cys	Ile	Lys	Val	Asp	Arg	Tyr	Ile	Gly	Met	Met			
	290					295					300				

<210> 8335

<211> 347

<212> PRT

<213> B.fragilis

<400> 8335

Trp	Thr	Arg	Gly	Tyr	Arg	Pro	Ile	Cys	Pro	Leu	Gly	Ala	Val	Asp	Leu
1			5					10						15	
Asp	Asn	Ser	Ala	Ser	Ser	Arg	Asn	Ile	Leu	Arg	Asn	Leu	Asp	Ala	Phe
			20					25					30		
Gly	Gln	Thr	Ala	Val	Val	Ala	Arg	Tyr	Ser	Ser	Val	Asn	Glu	Ala	Arg
		35					40					45			
Thr	Ala	Met	Gln	Glu	Gly	Lys	Ile	Tyr	Gly	Phe	Phe	Tyr	Ile	Pro	Lys
	50					55					60				
Gly	Met	Ser	Ala	Asp	Ala	Gln	Ser	Gln	Arg	Gln	Pro	Lys	Leu	Ser	Phe
65				70					75						80
Tyr	Thr	Asn	Asn	Ser	Tyr	Leu	Ile	Ala	Gly	Ser	Leu	Leu	Phe	Lys	Asp
				85					90					95	
Met	Lys	Met	Met	Ser	Glu	Leu	Ala	Ser	Gly	Ala	Ala	Ala	Arg	Ser	Val
			100					105					110		
Leu	Tyr	Ala	Lys	Gly	Ala	Thr	Glu	Asp	Gln	Ala	Met	Gly	Tyr	Leu	Gln
		115					120					125			
Pro	Ile	Val	Ile	Asp	Thr	His	Pro	Ile	Gln	Asn	Pro	Trp	Leu	Asn	Tyr
		130				135					140				
Ser	Val	Tyr	Leu	Cys	Asn	Thr	Leu	Val	Pro	Gly	Val	Leu	Met	Leu	Leu
145				150					155						160
Ile	Phe	Met	Val	Thr	Val	Phe	Ser	Ile	Gly	Val	Glu	Ile	Lys	Asp	Arg
			165						170					175	
Thr	Ala	Arg	Glu	Trp	Leu	Arg	Leu	Ser	Asn	Asn	Ser	Ile	Tyr	Ile	Ala
			180					185					190		
Leu	Ala	Gly	Lys	Leu	Leu	Pro	Gln	Thr	Val	Val	Phe	Phe	Ile	Met	Gly
		195					200					205			
Ile	Phe	Tyr	Asn	Val	Tyr	Leu	Tyr	Gly	Tyr	Leu	His	Phe	Pro	Cys	Asn
	210					215					220				
Ser	Gly	Ile	Leu	Pro	Met	Leu	Leu	Ala	Thr	Leu	Cys	Leu	Val	Leu	Ala
225					230					235					240
Ser	Gln	Cys	Cys	Gly	Ile	Leu	Met	Ile	Gly	Thr	Leu	Pro	Thr	Leu	Arg
				245					250					255	
Leu	Gly	Leu	Ser	Phe	Ala	Ser	Leu	Trp	Gly	Val	Ile	Ser	Phe	Ser	Ile
			260					265					270		
Ser	Gly	Phe	Ser	Phe	Pro	Val	Met	Ala	Met	Asn	Pro	Val	Leu	Gln	Ala
		275					280					285			
Leu	Ser	Asn	Leu	Phe	Pro	Leu	Arg	His	Tyr	Phe	Leu	Ile	Tyr	Val	Asp
	290					295					300				

Gln Ala Leu Asn Gly Tyr Ser Met Ala Tyr Ser Trp Ser Asn Tyr Met
 305 310 315 320
 Ala Leu Leu Ile Phe Met Leu Leu Pro Phe Phe Val Val His Arg Leu
 325 330 335
 Lys Glu Ala Leu Ile Tyr Tyr Lys Tyr Val Pro
 340 345

<210> 8336
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 8336
 Asn Ser Asn Met Pro Ala Lys Lys Lys Glu Thr Tyr Ser Gln Ala Ile
 1 5 10 15
 Glu Arg Leu Glu Lys Ile Val Arg Gln Ile Asp Ser Asn Glu Leu Glu
 20 25 30
 Ile Asp Glu Leu Ser Glu Lys Ile Lys Glu Ala Asn Glu Ile Ile Ala
 35 40 45
 Phe Cys Thr Gly Lys Leu Thr Lys Ala Asp Gln Glu Ile Glu Lys Leu
 50 55 60
 Leu Gln Glu Lys Arg Leu Ser Glu Glu
 65 70

<210> 8337
 <211> 470
 <212> PRT
 <213> B.fragilis

<400> 8337
 Asn Ser Cys Met Glu Lys Ile Ser Arg Thr Lys Ile Val Asp Leu Met
 1 5 10 15
 Lys Arg Glu Asp Phe Gly Ala Met Val Asn Val Lys Gly Trp Val Arg
 20 25 30
 Thr Arg Arg Gly Ser Lys Gln Val Asn Phe Ile Ala Leu Asn Asp Gly
 35 40 45
 Ser Thr Ile Asn Asn Val Gln Val Val Val Asp Leu Ala Asn Phe Asp
 50 55 60
 Glu Glu Met Leu Lys Gln Ile Thr Thr Gly Ala Cys Leu Ser Val Asn
 65 70 75 80
 Gly Val Leu Thr Glu Ser Val Gly Ala Gly Gln Lys Ala Glu Val Gln
 85 90 95
 Ala Arg Glu Ile Glu Val Leu Gly Thr Cys Asp Asn Thr Tyr Pro Leu
 100 105 110
 Gln Lys Lys Gly His Ser Met Glu Phe Leu Arg Glu Ile Ala His Leu
 115 120 125
 Arg Pro Arg Thr Asn Thr Phe Gly Ala Val Phe Arg Ile Arg His Asn
 130 135 140
 Met Ala Ile Ala Ile His Lys Phe Phe His Glu Lys Gly Phe Phe Tyr
 145 150 155 160
 Phe His Thr Pro Ile Ile Thr Ala Ser Asp Cys Glu Gly Ala Gly Gln
 165 170 175
 Met Phe Gln Val Thr Thr Met Asn Leu Tyr Asp Leu Lys Lys Asp Glu
 180 185 190
 Asn Gly Ser Ile Val Tyr Asp Asp Phe Phe Gly Lys Gln Ala Ser
 195 200 205
 Leu Thr Val Ser Gly Gln Leu Glu Gly Glu Leu Ala Ala Thr Ala Leu
 210 215 220
 Gly Ala Ile Tyr Thr Phe Gly Pro Thr Phe Arg Ala Glu Asn Ser Asn

1000
 900
 800
 700
 600
 500
 400
 300
 200
 100
 0

225 230 235 240
 Thr Pro Arg His Leu Ala Glu Phe Trp Met Ile Glu Pro Glu Val Ala
 245 250 255
 Phe Asn Glu Ile Gln Glu Asn Met Asp Leu Ala Glu Glu Phe Ile Lys
 260 265 270
 Tyr Cys Val Arg Trp Ala Leu Asp Asn Cys Ala Asp Asp Val Lys Phe
 275 280 285
 Leu Asn Asp Met Phe Asp Lys Gly Leu Ile Glu Arg Leu Glu Gly Val
 290 295 300
 Leu Lys Glu Asp Phe Val Arg Leu Pro Tyr Thr Glu Gly Ile Lys Ile
 305 310 315 320
 Leu Glu Glu Ala Val Ala Lys Gly His Lys Phe Glu Phe Pro Val Tyr
 325 330 335
 Trp Gly Val Asp Leu Ala Ser Glu His Glu Arg Tyr Leu Val Glu Asp
 340 345 350
 His Phe Lys Arg Pro Val Ile Leu Thr Asp Tyr Pro Lys Glu Ile Lys
 355 360 365
 Ala Phe Tyr Met Lys Gln Asn Glu Asp Gly Lys Thr Val Arg Ala Met
 370 375 380
 Asp Val Leu Phe Pro Lys Ile Gly Glu Ile Ile Gly Gly Ser Glu Arg
 385 390 395 400
 Glu Ser Asp Tyr Asn Lys Leu Met Thr Arg Ile Glu Glu Met His Ile
 405 410 415
 Pro Met Lys Asp Met Trp Trp Tyr Leu Asp Thr Arg Lys Phe Gly Thr
 420 425 430
 Cys Pro His Ser Gly Phe Gly Leu Gly Phe Glu Arg Leu Leu Leu Phe
 435 440 445
 Val Thr Gly Met Ser Asn Ile Arg Asp Val Ile Pro Phe Pro Arg Thr
 450 455 460
 Pro Arg Asn Ala Asp Phe
 465 470

<210> 8338
 <211> 124
 <212> PRT
 <213> B.fragilis

<400> 8338
 Ile Tyr Ser Met Glu Lys Leu Thr Met Gln Glu Glu Glu Val Met Ile
 1 5 10 15
 Tyr Ile Trp Glu Leu Glu Ser Cys Tyr Val Lys Asp Ile Val Ala Lys
 20 25 30
 Phe Glu Gln Pro Thr Pro Pro Tyr Thr Thr Val Ala Ser Ile Val Lys
 35 40 45
 Asn Leu Glu Arg Lys Lys Tyr Val Lys Ala Gln Arg Val Gly Asn Thr
 50 55 60
 Tyr Leu Tyr Thr Pro Ser Ile Lys Glu Ser Glu Tyr Lys Arg Ser Phe
 65 70 75 80
 Met Ser Gly Val Val Arg Asn Tyr Phe Glu Asn Ser Tyr Lys Glu Met
 85 90 95
 Val Ser Phe Phe Ala Lys Asp Gln Lys Ile Ser Thr Asn Asp Leu Lys
 100 105 110
 Glu Ile Ile Asp Met Ile Glu Lys Gly Gln Glu Lys
 115 120

<210> 8339
 <211> 746
 <212> PRT
 <213> B.fragilis

<400> 8339

Lys Thr Asn Ile Leu Pro Lys Met Lys Ile Lys Arg Leu Tyr Leu Leu
 1 5 10 15
 Gly Ala Trp Leu Leu Leu Gly Val Ser Ala Ser Ala Gln Ile Thr Ser
 20 25 30
 Ile Gln Pro Gln Pro Gln Gln Val Leu Ser Gln Ala Arg Asn Leu Ser
 35 40 45
 Leu Pro Asp Thr Tyr Leu Ile Val Gly Asp Thr Glu Ala Asn Thr His
 50 55 60
 Ala Val Ser Ala Leu Lys Thr Leu Leu Ala Gly Lys His Ser Asp Lys
 65 70 75 80
 Asn Gly Phe Arg Ile Tyr Ile Gly Glu Lys Gly Asp Lys Ala Ile Arg
 85 90 95
 Lys Phe Ala Arg Gln Ile Pro Asn His Lys Glu Gly Tyr Tyr Leu Ala
 100 105 110
 Ile Asn Asp Lys Glu Ile Val Leu Ala Gly Gln Asp Glu Arg Gly Thr
 115 120 125
 Phe Tyr Ala Leu Gln Thr Leu Ala Gln Leu Leu Asn Asp Asn Gln Leu
 130 135 140
 Pro Val Val Glu Ile Lys Asp Tyr Pro Ser Val Arg Phe Arg Gly Val
 145 150 155 160
 Val Glu Gly Phe Tyr Gly Thr Pro Trp Ser His Glu Ala Arg Leu Arg
 165 170 175
 Gln Leu Lys Phe Tyr Gly Glu Asn Lys Met Asn Thr Tyr Ile Tyr Gly
 180 185 190
 Pro Lys Asp Asp Pro Tyr His Ser Ser Pro Asn Trp Arg Leu Pro Tyr
 195 200 205
 Pro Glu Lys Glu Ala Leu Gln Leu Gln Glu Leu Val Lys Val Ala Asn
 210 215 220
 Glu Asn Glu Val Asp Phe Val Trp Ala Ile His Pro Gly Gln Asp Ile
 225 230 235 240
 Lys Trp Asn Gln Glu Asp Arg Asp Leu Leu Leu Ala Lys Phe Glu Lys
 245 250 255
 Met Tyr Asp Leu Gly Val Arg Ser Phe Ala Val Phe Phe Asp Asp Ile
 260 265 270
 Ser Gly Glu Gly Thr Asn Pro Asn Lys Gln Ala Glu Leu Leu Asn Tyr
 275 280 285
 Ile Asp Glu Lys Phe Val Lys Val Lys Pro Asp Val Thr Pro Leu Val
 290 295 300
 Met Cys Pro Thr Glu Tyr Asn Lys Ser Trp Ser Asn Pro Lys Gly Asn
 305 310 315 320
 Tyr Leu Thr Thr Leu Gly Glu Lys Leu Asn Pro Ser Ile Gln Ile Met
 325 330 335
 Trp Thr Gly Asp Arg Val Ile Ser Asp Ile Thr Lys Asp Gly Ile Ala
 340 345 350
 Trp Ile Asn Ala Arg Ile Lys Arg Pro Ala Tyr Ile Trp Trp Asn Phe
 355 360 365
 Pro Val Ser Asp Tyr Val Arg Asp His Leu Leu Leu Gly Pro Val Tyr
 370 375 380
 Gly Asn Asp Thr Gln Ile Ala Asp Gln Met Ser Gly Phe Val Thr Asn
 385 390 395 400
 Pro Met Glu His Ala Glu Ala Ser Lys Ile Ala Ile Tyr Ser Val Ala
 405 410 415
 Gly Tyr Ala Trp Asn Pro Glu Lys Tyr Asn Ser Glu Gln Thr Trp Lys
 420 425 430
 Asp Ala Ile Arg Thr Ile Leu Pro Ser Ala Ala Asp Glu Leu Glu Phe
 435 440 445
 Phe Ala Ala His Asn Ser Asp Leu Gly Pro Asn Gly His Lys Tyr Arg

115

<210> 8341
 <211> 205
 <212> PRT
 <213> B.fragilis

<400> 8341

Ser Met Lys Ile Ile Ala Val Gly Met Asn Tyr Ala Arg His Asn Glu
 1 5 10 15
 Glu Leu Gly His Thr Leu Glu Asn Lys Glu Pro Val Ile Phe Met Lys
 20 25 30
 Pro Asp Ser Ala Ile Leu Lys Asp Gly Lys Pro Phe Phe Ile Pro Asp
 35 40 45
 Phe Ser Asn Glu Val His Tyr Glu Thr Glu Leu Val Val Arg Ile Asn
 50 55 60
 Arg Leu Gly Lys Asn Ile Ala Ser Arg Phe Ala His Arg Tyr Tyr Asp
 65 70 75 80
 Ala Val Thr Val Gly Ile Asp Phe Thr Ala Arg Asp Leu Gln Arg Arg
 85 90 95
 Phe Arg Glu Ala Gly Asn Pro Trp Glu Leu Cys Lys Gly Phe Asp Ser
 100 105 110
 Ser Ala Ala Ile Gly Thr Phe Val Pro Val Glu Gln Leu Ala Asp Val
 115 120 125
 Gln Asn Leu His Phe His Leu Asp Ile Asp Gly Lys Thr Val Gln Gln
 130 135 140
 Gly His Thr Ala Asp Met Leu Phe Arg Val Asp Asp Ile Ile Ala Tyr
 145 150 155 160
 Val Ser Arg Phe Val Thr Leu Lys Ile Gly Asp Leu Leu Phe Thr Gly
 165 170 175
 Thr Pro Val Gly Val Gly Pro Val Ser Ile Gly Gln His Leu Glu Gly
 180 185 190
 Tyr Leu Glu Thr Glu Lys Leu Leu Asp Phe Tyr Ile Arg
 195 200 205

<210> 8342
 <211> 93
 <212> PRT
 <213> B.fragilis

<400> 8342

Lys Tyr Glu Met Lys Lys Leu Ala Leu Ile Ala Leu Val Phe Val Ala
 1 5 10 15
 Leu Gly Ala Ser Ala Gln Gln Asp Thr Leu Lys Tyr Arg Ile Ser Leu
 20 25 30
 Lys Asp Lys Val Gly Asn His Leu Phe Thr Gly Ser Ser Arg Glu Ile
 35 40 45
 Leu Val Gly Lys Ser His Arg Pro Pro Pro Ala Ser Ala Val Ala Cys
 50 55 60
 Arg Leu Tyr Arg Ser Ala Gly Leu Pro Ser Val Cys Gly Cys His Pro
 65 70 75 80
 Arg Gln Gly Ser Glu Asp Cys Gly Tyr Gly Lys Met Gly
 85 90

<210> 8343
 <211> 643
 <212> PRT
 <213> B.fragilis

<400> 8343

Phe	Ile	Ser	Leu	Leu	Cys	Phe	Ile	Asn	Lys	Pro	Ile	Asn	Thr	Thr	Met
1			5						10					15	
Arg	Thr	Lys	Ser	Ile	Phe	Leu	Leu	Leu	Leu	Leu	Ala	Val	Met	Pro	Leu
			20					25					30		
Cys	Val	Phe	Ser	Gln	Ser	Lys	Ser	Thr	Phe	Glu	Ile	Lys	Asn	Gly	His
		35					40					45			
Phe	Tyr	Arg	Asn	Gly	Lys	Ile	Thr	Pro	Val	Leu	Ser	Gly	Glu	Met	His
	50					55					60				
Tyr	Ala	Arg	Ile	Pro	His	Gln	Tyr	Trp	Arg	His	Arg	Leu	Gln	Met	Met
65					70				75						80
Lys	Gly	Met	Gly	Leu	Asn	Thr	Val	Ala	Thr	Tyr	Val	Phe	Trp	Asn	Leu
				85					90					95	
His	Glu	Pro	Glu	Pro	Gly	Lys	Trp	Asp	Phe	Thr	Gly	Asp	Lys	Asn	Leu
			100					105					110		
Ala	Glu	Phe	Ile	Lys	Thr	Ala	Gly	Glu	Glu	Gly	Met	Met	Val	Ile	Leu
		115					120					125			
Arg	Pro	Gly	Pro	Tyr	Val	Cys	Ala	Glu	Trp	Glu	Phe	Gly	Gly	Tyr	Pro
	130					135					140				
Trp	Trp	Leu	Gln	Asn	Val	Lys	Gly	Met	Glu	Ile	Arg	Arg	Asp	Asn	Pro
145				150					155						160
Glu	Phe	Leu	Lys	Tyr	Thr	Lys	Ala	Tyr	Ile	Asp	Arg	Leu	Tyr	Lys	Glu
				165					170					175	
Val	Gly	Ser	Leu	Gln	Cys	Thr	Lys	Gly	Gly	Pro	Ile	Val	Met	Val	Gln
			180					185					190		
Cys	Glu	Asn	Glu	Phe	Gly	Ser	Tyr	Val	Ala	Gln	Arg	Lys	Asp	Ile	Pro
		195					200					205			
Leu	Glu	Glu	His	Arg	Ala	Tyr	Asn	Ala	Lys	Ile	Lys	Gln	Gln	Leu	Ala
						215					220				
Asp	Ala	Gly	Phe	Asn	Val	Pro	Leu	Phe	Thr	Ser	Asp	Gly	Ser	Trp	Leu
225				230					235						240
Phe	Glu	Gly	Gly	Ala	Thr	Pro	Gly	Ala	Leu	Pro	Thr	Ala	Asn	Gly	Glu
				245					250					255	
Ser	Asp	Ile	Glu	Asn	Leu	Lys	Lys	Val	Val	Asp	Gln	Tyr	His	Asp	Gly
			260					265					270		
Lys	Gly	Pro	Tyr	Met	Val	Ala	Glu	Phe	Tyr	Pro	Gly	Trp	Leu	Ser	His
		275					280					285			
Trp	Ala	Glu	Pro	Phe	Pro	Gln	Ile	Gly	Ala	Ser	Gly	Ile	Ala	Arg	Gln
	290					295					300				
Thr	Glu	Lys	Tyr	Leu	Gln	Asn	Asp	Val	Ser	Phe	Asn	Phe	Tyr	Met	Val
305				310					315						320
His	Gly	Gly	Thr	Asn	Phe	Gly	Phe	Thr	Ser	Gly	Ala	Asn	Tyr	Asp	Lys
				325					330					335	
Lys	Arg	Asp	Ile	Gln	Pro	Asp	Met	Thr	Ser	Tyr	Asp	Tyr	Asp	Ala	Pro
			340					345					350		
Ile	Ser	Glu	Ala	Gly	Trp	Val	Thr	Pro	Lys	Tyr	Asp	Ser	Ile	Arg	Asn
		355					360					365			
Val	Ile	Lys	Lys	Tyr	Val	Lys	Tyr	Thr	Ile	Pro	Glu	Ala	Pro	Ala	Pro
	370					375					380				
Asn	Pro	Val	Ile	Glu	Ile	Pro	Ser	Ile	Gln	Leu	Asn	Lys	Val	Ala	Asp
385				390					395						400
Val	Leu	Ala	Phe	Ala	Glu	Lys	Gln	Lys	Pro	Val	Ser	Ser	Asp	Thr	Pro
			405						410					415	
Leu	Thr	Phe	Glu	Gln	Leu	Asn	Gln	Gly	Tyr	Gly	Tyr	Val	Leu	Tyr	Thr
			420					425					430		
Arg	His	Phe	Asn	Gln	Pro	Ile	Ser	Gly	Thr	Leu	Glu	Ile	Pro	Gly	Leu
		435					440					445			
Arg	Asp	Tyr	Ala	Val	Val	Tyr	Val	Asp	Gly	Glu	Gln	Val	Gly	Val	Leu
	450					455					460				

[illegible]

<400> 8344

<400> 8345

Leu	Gln	Arg	Ser	His	Ala	Phe	Leu	Tyr	Thr	Lys	Asp	Ser	Phe	Glu	Gly
1				5					10					15	
Thr	Gly	Arg	Asp	Arg	Arg	Lys	Glu	Lys	Ser	Met	Lys	Ala	Ala	Arg	Asn
			20					25					30		
Ser	Gly	Ile	Cys	Met	Lys	Leu	Asp	Asp	Phe	Thr	Gly	Val	Leu	Ser	Leu
			35				40					45			
Glu	His	Leu	Asp	Val	Asn	Thr	Met	Val	Tyr	Leu	Tyr	Ser	Glu	Gln	Gly
			50			55					60				
Glu	Leu	Ile	Gly	Lys	Ile	His	Ser	Thr	Lys	Ser	Ser	Ala	Thr	Phe	Thr
65					70					75				80	
Leu	Pro	Gln	Lys	Gly	Met	Tyr	Val	Leu	Val	Ile	His	Cys	Leu	Ser	Tyr
				85					90					95	
Pro	Val	Glu	Val	Arg	Arg	Val	Ile	Tyr							

100

105

<210> 8346
 <211> 331
 <212> PRT
 <213> B.fragilis

<400> 8346

Asp	Met	Val	Ser	Ala	Ile	Thr	Lys	Thr	Leu	Arg	Thr	Asn	Asn	Lys	Thr
1				5					10					15	
Val	Tyr	Val	Ser	Leu	Leu	Ser	Ile	Leu	Thr	Phe	Phe	Leu	Met	Leu	Asp
			20					25					30		
Tyr	Ile	Pro	Gly	Leu	Gln	Ala	Phe	Ser	Thr	Trp	Val	Thr	Pro	Pro	Leu
		35					40					45			
Ala	Leu	Phe	Leu	Gly	Leu	Ala	Phe	Ala	Leu	Thr	Cys	Gly	Gln	Ala	His
	50					55					60				
Pro	Lys	Phe	Asn	Lys	Lys	Thr	Ser	Lys	Tyr	Leu	Leu	Gln	Tyr	Ser	Val
65					70					75				80	
Val	Gly	Leu	Gly	Phe	Gly	Met	Asn	Leu	His	Ser	Ala	Leu	Ala	Ser	Gly
				85					90					95	
Lys	Glu	Gly	Met	Glu	Phe	Thr	Ile	Val	Ser	Val	Ile	Gly	Thr	Leu	Ile
			100					105					110		
Leu	Gly	Trp	Phe	Ile	Gly	Arg	Lys	Phe	Leu	Lys	Val	Asp	Arg	Asn	Thr
		115				120						125			
Ser	Tyr	Leu	Ile	Ser	Ser	Gly	Thr	Ala	Ile	Cys	Gly	Gly	Ser	Ala	Ile
	130					135					140				
Ala	Ala	Val	Gly	Pro	Val	Val	Lys	Ala	Asn	Asp	Ser	Glu	Met	Ser	Val
145					150					155					160
Ala	Leu	Ala	Thr	Ile	Phe	Ile	Leu	Asn	Ala	Leu	Ala	Leu	Phe	Ile	Phe
				165					170					175	
Pro	Val	Ile	Gly	His	Ala	Leu	Asn	Met	Ser	Gln	His	Glu	Phe	Gly	Thr
			180					185					190		
Trp	Ala	Ala	Ile	Ala	Ile	His	Asp	Thr	Ser	Ser	Val	Val	Gly	Ala	Gly
		195				200						205			
Ala	Ala	Tyr	Gly	Glu	Glu	Ala	Leu	Lys	Val	Ala	Thr	Thr	Ile	Lys	Leu
	210					215					220				
Thr	Arg	Ala	Leu	Trp	Ile	Ile	Pro	Met	Ala	Phe	Ala	Thr	Ser	Phe	Ile
225				230					235					240	
Phe	Lys	Ser	Lys	Gly	Gln	Lys	Ile	Ser	Ile	Pro	Trp	Phe	Ile	Phe	Phe
			245						250					255	
Phe	Val	Leu	Ala	Met	Ile	Val	Asn	Thr	Tyr	Leu	Leu	Gly	Ser	Val	Pro
		260						265					270		
Glu	Leu	Gly	Ala	Ala	Ile	Asn	Gly	Leu	Ala	Arg	Lys	Thr	Leu	Thr	Ile
		275					280					285			
Thr	Met	Phe	Phe	Ile	Gly	Ala	Ser	Leu	Ser	Leu	Asp	Val	Val	Lys	Ser
	290					295					300				
Val	Gly	Ile	Lys	Pro	Leu	Ile	Gln	Gly	Val	Leu	Leu	Trp	Val	Val	Ile
305					310					315					320
Ser	Leu	Ser	Thr	Leu	Ala	Tyr	Ile	Tyr	Trp	Phe					
				325					330						

<210> 8347
 <211> 143
 <212> PRT
 <213> B.fragilis

<400> 8347

Lys	Lys	Tyr	Pro	Ile	Leu	Lys	Pro	Ile	Ile	Asn	Arg	Pro	Asn	Asn	Met
1				5					10					15	

Glu Asp Phe Lys Lys Lys Ile Gly Thr Asp Met Asn Asp Lys Glu Ile
 20 25 30
 Val Phe Ser Lys Ser Ile Lys Ala Gly Lys Arg Ile Tyr Tyr Leu Asp
 35 40 45
 Val Lys Lys Asn Arg Lys Asp Glu Met Phe Leu Ala Ile Thr Glu Ser
 50 55 60
 Lys Lys Val Val Met Gly Glu Gly Asp Asp Ser Gln Val Ser Phe Glu
 65 70 75 80
 Lys His Lys Ile Phe Leu Tyr Lys Glu Asp Phe Gly Lys Phe Met Ala
 85 90 95
 Gly Leu Glu Gln Ala Ile Asn Phe Ile Asn Gln Asn Gln Glu Tyr Thr
 100 105 110
 Glu Asp Ser Glu Ser Glu Glu Lys Val Glu Pro Glu Ser Glu Pro Glu
 115 120 125
 Thr Thr Val Leu Asp Ser Glu Ile Lys Ile Asp Ile Asp Phe Glu
 130 135 140

<210> 8348
 <211> 140
 <212> PRT
 <213> B.fragilis

<400> 8348

Tyr Thr Met Leu Lys Thr Ile Leu Ser Ile Ser Gly Lys Pro Gly Leu
 1 5 10 15
 Tyr Lys Leu Ile Ser Gln Gly Lys Asn Met Leu Ile Val Glu Thr Ile
 20 25 30
 Asp Ala Ala Lys Lys Arg Phe Pro Ala Tyr Gly Asn Glu Lys Ile Ile
 35 40 45
 Ser Leu Ala Asp Ile Ala Met Tyr Thr Asn Asp Ser Glu Val Pro Leu
 50 55 60
 Arg Asp Val Leu Arg Ser Ile Lys Glu Lys Glu Asn Ala Ala Ile Ala
 65 70 75 80
 Ser Ile Asp Val Lys Lys Ala Thr Ser Glu Gln Leu Arg Glu Tyr Leu
 85 90 95
 Ala Glu Val Leu Pro Asp Phe Asp Arg Asp Arg Val Tyr Thr Asn Asp
 100 105 110
 Ile Lys Lys Leu Ile Leu Trp Tyr Asn Ile Leu Val Ser Asn Gly Ile
 115 120 125
 Thr Asp Phe Gly Glu Glu Thr Ala Val Glu Ala Glu
 130 135 140

<210> 8349
 <211> 274
 <212> PRT
 <213> B.fragilis

<400> 8349

Ser Phe Gln Pro Arg Gly Glu Asp Phe Leu Gly Tyr Arg Pro Gly Val
 1 5 10 15
 Tyr Val Ile Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn
 20 25 30
 Thr Asn Val Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala
 35 40 45
 Leu Leu Glu Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys
 50 55 60
 Gly Ser Cys Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys
 65 70 75 80
 His Phe Tyr Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile

				85					90				95		
Phe	Ala	Leu	Arg	Gly	Trp	Lys	Thr	Glu	Glu	Ile	Asn	Gly	Ile	Gln	Phe
			100					105					110		
Glu	Leu	Asn	Ser	Ile	Leu	Val	Glu	Lys	Trp	Glu	Gly	Lys	Cys	Tyr	Arg
		115					120					125			
Leu	Val	Ile	Gln	Arg	Gln	Arg	Arg	Asn	Ser	Gly	Asp	Leu	Asp	Leu	Trp
	130					135					140				
Glu	Gly	Glu	Tyr	Thr	Tyr	Arg	Cys	Ile	Leu	Thr	Asn	Asp	Tyr	Lys	Ser
145					150					155					160
Ser	Thr	Arg	Asp	Ile	Val	Glu	Phe	Tyr	Asn	Leu	Arg	Gly	Gly	Lys	Glu
			165					170						175	
Arg	Ile	Phe	Asp	Asp	Met	Asn	Asn	Gly	Phe	Gly	Trp	Ser	Arg	Leu	Pro
		180						185					190		
Lys	Ser	Phe	Met	Ala	Glu	Asn	Thr	Val	Phe	Leu	Leu	Leu	Thr	Ala	Leu
		195					200					205			
Ile	His	Asn	Phe	Tyr	Lys	Thr	Ile	Met	Ser	Arg	Leu	Asp	Thr	Lys	Ala
	210					215					220				
Phe	Gly	Leu	Lys	Lys	Thr	Ser	Arg	Ile	Lys	Ala	Phe	Val	Phe	Arg	Phe
225					230					235					240
Ile	Ser	Val	Pro	Ala	Lys	Trp	Ile	Met	Thr	Ala	Arg	Gln	Tyr	Val	Leu
			245					250						255	
Asn	Ile	Tyr	Thr	Glu	Asn	Arg	Ala	Tyr	Ala	Lys	Pro	Phe	Lys	Thr	Glu
		260					265						270		
Phe	Gly														

<210> 8350
 <211> 868
 <212> PRT
 <213> B.fragilis

<400> 8350
 Glu Arg Arg Thr Asn Asp Met Asn Phe Asn Asn Phe Thr Ile Lys Ser
 1 5 10 15
 Gln Glu Ala Val Gln Glu Ala Ile Asn Leu Ala Gln Ser Arg Gly Gln
 20 25 30
 Gln Ala Ile Glu Thr Ala His Ile Leu Tyr Gly Val Met Lys Val Gly
 35 40 45
 Glu Asn Val Thr Asn Phe Ile Phe Gln Lys Leu Gly Leu Asn Gly Gln
 50 55 60
 Gln Ile Ser Leu Val Leu Asp Lys Gln Ile Asp Ser Phe Pro Lys Val
 65 70 75 80
 Ser Gly Gly Glu Pro Tyr Leu Ser Arg Glu Ala Asn Glu Val Phe Gln
 85 90 95
 Lys Ala Thr Gln Tyr Ser Lys Glu Met Gly Asp Glu Phe Val Ser Leu
 100 105 110
 Glu His Leu Leu Leu Ala Leu Leu Thr Val Lys Ser Thr Val Ser Thr
 115 120 125
 Ile Leu Lys Asp Ala Gly Met Thr Glu Lys Glu Leu Arg Gly Ala Ile
 130 135 140
 Ser Glu Leu Arg Lys Gly Glu Lys Val Thr Ser Gln Ser Ser Glu Asp
 145 150 155 160
 Asn Tyr Gln Ser Leu Glu Lys Tyr Ala Ile Asn Leu Asn Glu Ala Ala
 165 170 175
 Arg Ser Gly Lys Leu Asp Pro Val Ile Gly Arg Asp Glu Glu Ile Arg
 180 185 190
 Arg Val Leu Gln Ile Leu Ser Arg Arg Thr Lys Asn Asn Pro Ile Leu
 195 200 205
 Ile Gly Glu Pro Gly Thr Gly Lys Thr Ala Ile Val Glu Gly Leu Ala

210	215	220
His Arg Ile Leu Arg Gly Asp Val Pro Glu Asn Leu Lys Asn Lys Gln		
225	230	235
Val Tyr Ser Leu Asp Met Gly Ala Leu Val Ala Gly Ala Lys Tyr Lys		240
	245	250
Gly Glu Phe Glu Glu Arg Leu Lys Ser Val Val Asn Glu Val Lys Lys		255
	260	265
Ser Glu Gly Asn Ile Ile Leu Phe Ile Asp Glu Ile His Thr Leu Val		270
	275	280
Gly Ala Gly Lys Gly Glu Gly Ala Met Asp Ala Ala Asn Ile Leu Lys		285
	290	295
Pro Ala Leu Ala Arg Gly Glu Leu Arg Ser Ile Gly Ala Thr Thr Leu		300
305	310	315
Asp Glu Tyr Gln Lys Tyr Phe Glu Lys Asp Lys Ala Leu Glu Arg Arg		320
	325	330
Phe Gln Ile Val Gln Val Asp Glu Pro Asp Asn Leu Ser Thr Ile Ser		335
	340	345
Ile Leu Arg Gly Leu Lys Glu Arg Tyr Glu Asn His His His Val Arg		350
	355	360
Ile Lys Asp Asp Ala Ile Ile Ala Ala Val Glu Leu Ser Ser Arg Tyr		365
	370	375
Ile Thr Asp Arg Phe Leu Pro Asp Lys Ala Ile Asp Leu Met Asp Glu		380
385	390	395
Ala Ala Ala Lys Leu Arg Met Glu Val Asp Ser Val Pro Glu Gly Leu		400
	405	410
Asp Glu Ile Ser Arg Lys Ile Lys Gln Leu Glu Ile Glu Arg Glu Ala		415
	420	425
Ile Lys Arg Glu Asn Asp Glu Pro Lys Leu Gln Thr Ile Gly Lys Glu		430
	435	440
Leu Ala Glu Leu Lys Glu Gln Glu Lys Ser Tyr Lys Ala Lys Trp Gln		445
	450	455
Ser Glu Lys Ser Leu Met Asp Ile Ile Gln Gln Asn Lys Val Glu Ile		460
465	470	475
Glu Asn Leu Lys Phe Glu Ala Asp Lys Ala Glu Arg Glu Gly Asn Tyr		480
	485	490
Gly Lys Val Ala Glu Ile Arg Tyr Gly Lys Leu Gln Glu Leu His Lys		495
	500	505
Glu Ile Glu Asp Thr Gln Lys Lys Leu His Glu Met Gln Gly Asp Thr		510
	515	520
Ala Met Ile Lys Glu Glu Val Asp Ala Glu Asp Ile Ala Asp Val Val		525
	530	535
Ser Arg Trp Thr Gly Ile Pro Val Ser Lys Met Met Gln Ser Glu Lys		540
545	550	555
Asp Lys Leu Leu His Leu Glu Glu Glu Leu His Gln Arg Val Ile Gly		560
	565	570
Gln Asp Glu Ala Ile Ala Ala Val Ser Asp Ala Val Arg Arg Ser Arg		575
	580	585
Ala Gly Leu Gln Asp Pro Lys Arg Pro Ile Gly Ser Phe Ile Phe Leu		590
	595	600
Gly Thr Thr Gly Val Gly Lys Thr Glu Leu Ala Lys Ala Leu Ala Glu		605
	610	615
Phe Leu Phe Asp Asp Glu Thr Met Met Thr Arg Ile Asp Met Ser Glu		620
625	630	635
Tyr Gln Glu Lys His Ser Val Ser Arg Leu Val Gly Ala Pro Pro Gly		640
	645	650
Tyr Val Gly Tyr Asp Glu Gly Gly Gln Leu Thr Glu Ala Ile Arg Arg		655
	660	665
Lys Pro Tyr Ser Val Val Leu Phe Asp Glu Ile Glu Lys Ala His Pro		670
	675	680
		685

Asp Val Phe Asn Ile Leu Leu Gln Val Leu Asp Asp Gly Arg Leu Thr
 690 695 700
 Asp Asn Lys Gly Arg Val Val Asn Phe Lys Asn Thr Ile Ile Ile Met
 705 710 715 720
 Thr Ser Asn Met Gly Ser Ser Tyr Ile Gln Ser Gln Met Glu Lys Leu
 725 730 735
 Asn Gly Ala Asn Asn Glu Glu Val Val Glu Glu Thr Lys Lys Glu Val
 740 745 750
 Met Asn Met Leu Lys Lys Thr Ile Arg Pro Glu Phe Leu Asn Arg Ile
 755 760 765
 Asp Glu Thr Ile Met Phe Leu Pro Leu Thr Glu Lys Asp Ile Lys Gln
 770 775 780
 Ile Val Leu Leu Gln Ile Lys Ser Val Gln Lys Met Leu Ala Gly Asn
 785 790 795 800
 Gly Val Glu Leu Glu Leu Thr Asp Ala Ala Leu Asp Phe Leu Ser Gln
 805 810 815
 Val Gly Tyr Asp Pro Glu Phe Gly Ala Arg Pro Val Lys Arg Ala Ile
 820 825 830
 Gln Arg Tyr Leu Leu Asn Asp Leu Ser Lys Lys Leu Leu Ala Gln Glu
 835 840 845
 Val Asp Arg Ser Lys Ala Ile Ile Val Asp Ala Gln Gly Asp Gly Leu
 850 855 860
 Val Phe Arg Asn
 865

<210> 8351
 <211> 92
 <212> PRT
 <213> B.fragilis

<400> 8351
 Ala Val Leu Ala Gly Leu Tyr Glu Ile Cys Ile Glu Tyr Phe Arg Glu
 1 5 10 15
 Leu Ile Cys Arg Ile Gln Gly Phe Leu Ile Ile Phe Val Ala Ile Arg
 20 25 30
 Arg Asn Leu Lys Ser Gln Cys Tyr Glu Glu Tyr Tyr Thr Lys Arg Thr
 35 40 45
 Lys Ala Phe Leu Arg Tyr Tyr Ser Val Leu Glu Ile Trp Thr Ile Ser
 50 55 60
 Leu Phe Arg Asn Asn Val Thr Asn Ala His Ala Leu Leu Tyr Met Gln
 65 70 75 80
 Ile Tyr Ser Ile Glu Arg Gly Leu Leu Tyr Ile Ile
 85 90

<210> 8352
 <211> 431
 <212> PRT
 <213> B.fragilis

<400> 8352
 Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser

65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
 260 265 270
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
 275 280 285
 Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
 290 295 300
 Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
 305 310 315 320
 Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
 325 330 335
 Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
 340 345 350
 Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn
 355 360 365
 Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
 370 375 380
 Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
 385 390 395 400
 Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
 405 410 415
 Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
 420 425 430

<210> 8353

<211> 189

<212> PRT

<213> B.fragilis

<400> 8353

Ile Asn Lys Ala Cys Leu Gly Thr Lys Tyr Ser Met Glu Ile Trp Asn
 1 5 10 15
 Cys Asn Gln His Asn Asn Met Pro Asn Pro Lys Val Ser Gln Ser Ala
 20 25 30
 Tyr Leu Leu Leu Glu Glu Ser Ser Lys Met Asn Val Gly Asp Lys Ala
 35 40 45
 Pro Glu Leu Leu Gly Ile Asn Glu Lys Gly Glu Glu Val Arg Leu Asn

50 55 60
 Asn Tyr Lys Gly Arg Lys Ile Val Leu Tyr Phe Tyr Pro Lys Asp Asn
 65 70 75 80
 Thr Ser Gly Cys Thr Ala Gln Ala Cys Ser Leu Arg Asp Asn Tyr Ala
 85 90 95
 Glu Leu Arg Lys Ala Gly Tyr Glu Val Ile Gly Val Ser Val Asp Asn
 100 105 110
 Glu Lys Ser His Gln Lys Phe Ile Glu Lys Asn Asn Leu Pro Phe Thr
 115 120 125
 Leu Ile Ala Asp Thr Asp Lys Lys Leu Val Glu Gln Phe Gly Val Trp
 130 135 140
 Gly Glu Lys Lys Leu Tyr Gly Arg Ala Tyr Met Gly Thr Leu Arg Thr
 145 150 155 160
 Thr Phe Leu Ile Asn Glu Glu Gly Val Ile Glu Arg Ile Ile Gly Pro
 165 170 175
 Lys Glu Val Lys Thr Lys Glu His Ala Ser Gln Ile Leu
 180 185

<210> 8354
 <211> 407
 <212> PRT
 <213> B.fragilis

<400> 8354

Ile Leu Asn Leu Lys Phe Leu Ile Lys Glu Met Gly Arg Val Leu Ile
 1 5 10 15
 Ile Gly Ala Gly Gly Val Gly Thr Val Val Ala His Lys Val Ala Gln
 20 25 30
 Asn Ala Asp Val Phe Thr Asp Ile Met Ile Ala Ser Arg Thr Lys Ser
 35 40 45
 Lys Cys Asp Asp Ile Val Lys Ala Ile Gly Asn Pro Asn Ile Lys Thr
 50 55 60
 Ala Gln Val Asp Ala Asp Asn Val Asp Glu Leu Val Ala Leu Phe Asn
 65 70 75 80
 Asp Phe Lys Pro Glu Met Val Ile Asn Val Ala Leu Pro Tyr Gln Asp
 85 90 95
 Leu Thr Ile Met Glu Ala Cys Leu Lys Ala Gly Val Asn Tyr Leu Asp
 100 105 110
 Thr Ala Asn Tyr Glu Pro Lys Asp Glu Ala His Phe Glu Tyr Ser Trp
 115 120 125
 Gln Trp Ala Tyr His Glu Arg Phe Lys Glu Ala Gly Leu Thr Ala Ile
 130 135 140
 Leu Gly Cys Gly Phe Asp Pro Gly Val Ser Gly Ile Tyr Thr Ala Tyr
 145 150 155 160
 Ala Ala Lys His Tyr Phe Asp Glu Ile Gln Tyr Leu Asp Ile Val Asp
 165 170 175
 Cys Asn Ala Gly Asn His His Lys Ala Phe Ala Thr Asn Phe Asn Pro
 180 185 190
 Glu Ile Asn Ile Arg Glu Ile Thr Gln Asn Gly Arg Tyr Tyr Glu Asn
 195 200 205
 Gly Gln Trp Val Thr Thr Gly Pro Leu Glu Ile His Lys Asp Leu Thr
 210 215 220
 Tyr Pro Asn Ile Gly Pro Arg Asp Ser Tyr Leu Leu Tyr His Glu Glu
 225 230 235 240
 Leu Glu Ser Leu Val Lys Asn Phe Pro Thr Ile Lys Arg Ala Arg Phe
 245 250 255
 Trp Met Thr Phe Gly Gln Glu Tyr Leu Thr His Leu Arg Val Ile Gln
 260 265 270
 Asn Ile Gly Met Ala Arg Ile Asp Glu Ile Asp Tyr Asn Gly Gln Lys

275 280 285
 Ile Val Pro Leu Gln Phe Leu Lys Ala Val Leu Pro Asn Pro Gln Asp
 290 295 300
 Leu Gly Glu Asn Tyr Glu Gly Glu Thr Ser Ile Gly Cys Arg Ile Arg
 305 310 315 320
 Gly Leu Lys Asp Gly Lys Glu Arg Thr Tyr Tyr Val Tyr Asn Asn Cys
 325 330 335
 Ser His Glu Glu Ala Tyr Lys Glu Thr Gly Met Gln Gly Val Ser Tyr
 340 345 350
 Thr Thr Gly Val Pro Ala Met Ile Gly Ala Met Met Phe Phe Lys Gly
 355 360 365
 Glu Trp Lys Arg Pro Gly Val Asn Asn Val Glu Glu Phe Asn Pro Asp
 370 375 380
 Pro Phe Met Glu Gln Leu Asn Lys Gln Gly Leu Pro Trp His Glu Val
 385 390 395 400
 Phe Asp Gly Asn Leu Glu Leu
 405

<210> 8355
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 8355
 His Val His Tyr Leu Phe Leu Gly Phe Phe His Tyr Phe Leu Val Val
 1 5 10 15
 Gly Ala Val Gln Phe Phe His Leu Ala Leu Tyr Val Ala Ala Ala His
 20 25 30
 Ile Gly Gly His Asn Asp Asp Cys Ile Phe Lys Val Tyr His Thr Ala
 35 40 45
 Phe Val Ile Cys Gln Pro Ser Val Ile Glu Tyr Leu Gln Gln Asp Ile
 50 55 60
 Lys Tyr Ile Arg Met Cys Phe Leu Asp Phe Ile Lys Gln Tyr Tyr Arg
 65 70 75 80
 Ile Gly Phe Ala Thr Asp Arg Leu Cys Gln Leu Ser Ala Phe Val Ile
 85 90 95
 Ser Tyr Ile Ser Arg Arg Arg Ser Asn
 100 105

<210> 8356
 <211> 243
 <212> PRT
 <213> B.fragilis

<400> 8356
 Glu Met Asn Leu Glu Glu Val Leu Asn Tyr Arg Arg Ser Val Arg Val
 1 5 10 15
 Phe Asp Lys Thr Lys Pro Leu Asp Pro Glu Lys Val Lys His Cys Leu
 20 25 30
 Glu Leu Ala Thr Leu Ala Pro Asn Ser Ser Asn Met Gln Leu Trp Glu
 35 40 45
 Phe Tyr Gln Val Ile Gln Pro Glu Leu Leu Ala Lys Ile Ser Lys Ala
 50 55 60
 Cys Leu Asp Gln Thr Ala Thr Ser Thr Ala Ser Glu Val Val Val Phe
 65 70 75 80
 Val Thr Arg Gln Asp Leu Tyr Arg Ser Arg Ala Lys Phe Val Leu Asp
 85 90 95
 Phe Glu Arg Gly Asn Val Arg Arg Asn Ser Pro Lys Glu Arg Gln Glu
 100 105 110

Lys Arg Ile Lys Asp Arg Glu Leu Tyr Tyr Gly Lys Leu Met Pro Phe
 115 120 125
 Leu Tyr Ala Arg Phe Phe Arg Ile Leu Gly Leu Leu Arg Ser Val Leu
 130 135 140
 Ala Lys Ala Ile Gly Leu Phe Arg Pro Ile Val Arg Glu Val Ser Glu
 145 150 155 160
 Ser Asp Met Arg Val Val Val His Lys Ser Cys Ala Leu Ala Ala Gln
 165 170 175
 Thr Phe Met Ile Ala Met Ala Asn Glu Gly Tyr Asp Thr Cys Pro Leu
 180 185 190
 Glu Gly Phe Asp Ser Lys Gln Met Lys Lys Leu Leu Lys Leu Pro His
 195 200 205
 Gly Ala Glu Val Asn Met Val Ile Ala Cys Gly Ile Arg Asp Gly Asn
 210 215 220
 Lys Gly Ile Trp Gly Glu Arg Gly Arg Val Pro Phe Asp Glu Val Tyr
 225 230 235 240
 His Arg Val

<210> 8357
 <211> 210
 <212> PRT
 <213> B.fragilis

<400> 8357
 Asn Asn Ser Leu Leu Met Ala Ile Lys Ile Gly Ile Thr Gly Gly Ile
 1 5 10 15
 Gly Ser Gly Lys Ser Val Val Ser His Leu Leu Glu Val Met Gly Val
 20 25 30
 Pro Val Tyr Ile Ser Asp Glu Glu Ser Lys Lys Val Val Ala Thr Asp
 35 40 45
 Pro Val Ile Arg Lys Glu Leu Cys Asp Leu Val Gly Glu Glu Val Phe
 50 55 60
 Ser Gly Gly Lys Leu Asn Lys Thr Leu Leu Ala Thr Tyr Leu Phe Ala
 65 70 75 80
 Ser Ser Thr His Ala Ser Gln Val Asn Gly Ile Ile His Pro Arg Val
 85 90 95
 Lys Glu His Phe Arg Gln Trp Ser Ser His Lys Glu Cys Leu Asp Ile
 100 105 110
 Ile Gly Met Glu Ser Ala Ile Leu Ile Glu Ser Gly Phe Ala Asp Glu
 115 120 125
 Val Asp Cys Ile Val Met Val Tyr Ala Pro Leu Glu Leu Arg Val Glu
 130 135 140
 Arg Ala Val Arg Arg Asp Asn Ala Ser Cys Glu Gln Ile Met Gln Arg
 145 150 155 160
 Ile Arg Ser Gln Met Ser Asp Glu Glu Lys Cys Glu Arg Ala Ser Phe
 165 170 175
 Val Ile Ile Asn Asp Gly Glu Lys Pro Leu Ile Pro Gln Ile Leu Glu
 180 185 190
 Leu Ile Ala Phe Leu Tyr Gln Lys Ile His Tyr Leu Cys Ser Ala Lys
 195 200 205
 Asn Asn
 210

<210> 8358
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 8358

Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 8359

<211> 116

<212> PRT

<213> B.fragilis

<400> 8359

Lys Thr Asn Lys Thr Asp Tyr Phe Met Asn Leu Leu Thr Val Phe Phe
 1 5 10 15
 Gln Ala Pro Ala Ala Gly Pro Asp Gly Ser Leu Met Trp Ile Met Leu
 20 25 30
 Ile Ala Met Phe Val Ile Met Tyr Phe Phe Met Ile Arg Pro Gln Asn
 35 40 45
 Lys Lys Gln Lys Glu Ile Ala Asn Phe Arg Lys Ser Leu Gln Val Asn
 50 55 60
 Gln Asn Val Ile Thr Ala Gly Gly Ile His Gly Val Ile Lys Glu Ile
 65 70 75 80
 Asn Asp Asp Tyr Ile Val Leu Glu Ile Ala Ser Asn Val Lys Ile Lys
 85 90 95
 Ile Asp Lys Asn Ser Ile Phe Ala Asp Ala Ser Ala Ala Asn Ser Gln
 100 105 110
 Ser Ala Thr Lys
 115

<210> 8360

<211> 178

<212> PRT

<213> B.fragilis

<400> 8360

Thr Phe Gly Asn Ser Arg Arg Asn Arg Gln Lys Leu Leu Phe Gly Arg
 1 5 10 15
 Tyr Arg His His Asp Glu Ser Val Gln Gln Lys Ile Ile Ile His Phe
 20 25 30
 Ser Ile His Asn Gln Met Pro Glu Ala Arg Ile Asp Lys Trp Met Trp
 35 40 45
 Ala Val Arg Ile Phe Lys Thr Arg Thr Ile Ala Ala Glu Ala Cys Lys
 50 55 60
 Lys Gly Arg Ile Ser Ile Asn Gly Ser Phe Val Lys Ala Ala Arg Met
 65 70 75 80
 Ile Lys Pro Gly Asp Val Ile Gln Val Lys Lys Pro Pro Ile Thr Tyr
 85 90 95
 Ser Phe Lys Val Leu Gln Ala Ile Glu Lys Arg Val Gly Ala Lys Leu
 100 105 110
 Val Ser Glu Met Met Glu Asn Val Thr Thr Pro Asp Gln Tyr Glu Leu
 115 120 125

Leu Glu Met Ser Lys Ile Ser Gly Phe Ile Asp Arg Ala Arg Gly Thr
 130 135 140
 Gly Arg Pro Thr Lys Lys Asp Arg Arg Ser Ile Glu Glu Phe Thr Thr
 145 150 155 160
 Pro Glu Phe Met Asp Asp Phe Asp Phe Asp Phe Asp Phe Glu Glu Asp
 165 170 175
 Asn Glu

<210> 8361
 <211> 423
 <212> PRT
 <213> B.fragilis

<400> 8361

Ser Leu Met Asn Gln Lys Arg Asn Gln Thr Lys Val Val Asn Val Phe
 1 5 10 15
 Thr Val Phe Met Val Met Leu Ile Leu Tyr Phe Ile Val Gly Leu Phe
 20 25 30
 Thr Val Ile Asn Gln Gln Phe Gln Ile Pro Leu Gln Thr Ala Met Leu
 35 40 45
 Pro His Asp Gly Asn Ile Thr Asn Ala Leu Val Thr Met Leu Asn Phe
 50 55 60
 Ser Trp Phe Leu Ala Tyr Pro Leu Ser Glu Gly Phe Gly Thr Arg Trp
 65 70 75 80
 Leu Glu Lys Tyr Gly Tyr Arg Lys Thr Ser Tyr Leu Ala Leu Leu Ile
 85 90 95
 Leu Ile Ala Gly Leu Ala Ile Tyr Glu Ala Ala Val Leu Phe His Ile
 100 105 110
 Tyr Thr Pro Met Gln Val Ser Ile Ile Gly Asn His Ile Ser Val Gly
 115 120 125
 Phe Phe Ile Phe Leu Ile Gly Ser Phe Val Ile Gly Val Ala Ala Thr
 130 135 140
 Ile Leu Gln Val Val Leu Asn Leu Tyr Leu Thr Val Cys Arg Ile Gly
 145 150 155 160
 Lys Thr Thr Ala Leu Gln Arg Gln Met Ile Gly Gly Thr Ser Asn Ser
 165 170 175
 Ile Gly Met Ala Ile Ala Pro Leu Val Ile Ser Tyr Leu Ile Phe His
 180 185 190
 Gly Thr Pro Leu His Asp Ile Val Thr Lys Gln Phe Ile Ile Pro Leu
 195 200 205
 Ile Ile Leu Ile Leu Ile Met Leu Ile Ile Thr Leu Leu Val Gly Lys
 210 215 220
 Thr Gln Met Pro Ser Ile Asp Asn Val Arg Gln Ala Pro Gly Glu Lys
 225 230 235 240
 Phe Asp Lys Ser Val Trp Ser Phe Arg Asn Leu Lys Leu Gly Val Trp
 245 250 255
 Gly Ile Phe Phe Tyr Val Gly Ile Glu Val Ala Val Gly Ala Asn Val
 260 265 270
 Asn Met Tyr Ala Ser Glu Leu Gly Gly Ser Phe Ala Ser Asn Ala Thr
 275 280 285
 His Met Ala Ala Leu Tyr Trp Gly Leu Leu Leu Leu Gly Arg Phe Leu
 290 295 300
 Gly Ser Phe Ile Lys Gln Val Pro Ser Glu Lys Gln Leu Val Ile Ala
 305 310 315 320
 Ser Ile Gly Ala Ile Val Leu Leu Val Leu Ala Met Leu Thr Ala Asn
 325 330 335
 Pro Trp Ile Leu Thr Leu Ile Gly Phe Phe His Ser Ile Met Trp Pro
 340 345 350

Ala Ile Phe Thr Leu Ala Thr Asp Gln Leu Gly Lys Tyr Thr Thr Lys
 355 360 365
 Ala Ser Gly Val Leu Thr Met Gly Val Ile Gly Gly Gly Ile Ile Pro
 370 375 380
 Leu Leu Gln Gly Ile Phe Ala Asp Val Met Gly Gly Asn Trp Leu Trp
 385 390 395 400
 Thr Trp Leu Leu Val Ile Ala Gly Glu Ala Tyr Ile Leu Tyr Tyr Gly
 405 410 415
 Leu Asn Gly Tyr Lys Gln His
 420

<210> 8362
 <211> 229
 <212> PRT
 <213> B.fragilis

<400> 8362

Thr Ile Met Lys Thr Met Lys Phe Ile Leu Ala Cys Val Leu Leu Leu
 1 5 10 15
 Ser Pro Leu Leu Cys Gln Ala Gln Lys Asn Leu Phe Asn Lys Tyr Asn
 20 25 30
 Asp Met Lys Gly Val Ser Ser Val Tyr Ile Ser Lys Ala Met Met Glu
 35 40 45
 Leu Asn Pro Asn Leu Phe Met Lys Asp Leu Tyr Ile Gly Lys Val Ala
 50 55 60
 Glu His Leu Asn Ser Val Gln Val Leu Ser Thr His Asp Asn Lys Val
 65 70 75 80
 Arg Glu Glu Met Ala Lys Asp Ile Arg Ser Leu Val Gln Ser Ser Lys
 85 90 95
 Tyr Glu Leu Leu Met Lys Gln Lys Ser Thr Val Ser Gly Ser Glu Val
 100 105 110
 Tyr Val Asn Arg Lys Gly Ser Lys Val Lys Glu Leu Ile Met Val Met
 115 120 125
 Asn Gly Ala Ser Ser Leu Lys Phe Val Tyr Met Glu Gly Asp Met Thr
 130 135 140
 Thr Asp Asp Ile Lys Lys Leu Met Leu Tyr Gln Ser Thr Ser Gln Asn
 145 150 155 160
 Phe Ile Ile Ser Gly Asp Leu Phe Tyr Ala Asn Asn Lys Pro Val Thr
 165 170 175
 Tyr Phe Lys Lys Gly Asn Ser Asp Asn Gln Lys Asp Met Ala Glu Leu
 180 185 190
 Ser Gly Thr Tyr Asn Leu Asn Ser Ile Asp Thr Asn Tyr Lys Glu Glu
 195 200 205
 Leu Ser Thr Leu Asn Asp Lys Leu Lys Arg Ile Asp Gln Gly Leu Lys
 210 215 220
 Asn Met Asn Ile Lys
 225

<210> 8363
 <211> 189
 <212> PRT
 <213> B.fragilis

<400> 8363

Lys Asp Met Lys Tyr Leu Ile Val Gly Leu Gly Asn Ile Gly Pro Glu
 1 5 10 15
 Tyr His Glu Thr Arg His Asn Ile Gly Phe Met Val Leu Asp Ala Leu
 20 25 30
 Ala Arg Ala Asn Asn Leu Ser Phe Thr Asp Gly Arg Tyr Gly Phe Thr

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

<400> 8365

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<210> 8366
<211> 234
<212> PRT
<213> B.fragilis
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<400> 8366

Tyr	Ile	Met	Asp	Ala	Leu	Lys	Met	Leu	Ile	Val	Val	Thr	Gly	Thr	Asp
1				5					10					15	
Met	Tyr	Ala	Asp	Gly	Asn	Leu	Gln	Thr	Gly	Leu	Trp	Leu	Ser	Glu	Leu
			20					25					30		
Thr	His	Ile	Tyr	His	Cys	Ala	Glu	Glu	Ala	Gly	Tyr	Glu	Ile	Thr	Val
		35					40					45			

Ala Ser Pro Lys Gly Gly Asn Val Pro Val Asp Pro Glu Ser Leu Lys
 50 55 60
 Pro Met Met Leu Asp Lys Leu Ser Lys Asp Tyr Trp Asp Asp Leu Glu
 65 70 75 80
 Phe Arg Arg Glu Leu Gln His Ala Lys Ser Leu Ala Glu Val Ser Gly
 85 90 95
 Gln Leu Phe Asp Cys Val Tyr Leu Ala Gly Gly His Gly Ala Met Tyr
 100 105 110
 Asp Phe Pro Asp Asp Thr Val Leu Gln Ala Ile Ile Glu Lys His Tyr
 115 120 125
 Glu Ser Asp Lys Ala Val Ala Ala Ile Cys His Gly Val Ser Gly Leu
 130 135 140
 Leu Asn Val Lys Leu Ser Gly Gly Glu Tyr Leu Ile Lys Asp Lys Lys
 145 150 155 160
 Ile Thr Gly Phe Ser Trp Phe Glu Glu Ser Leu Ala Gly Arg Lys Lys
 165 170 175
 Glu Val Pro Phe Asp Leu Glu Ala Ala Leu Glu Lys Arg Gly Ala Asp
 180 185 190
 Tyr Glu Lys Ala Leu Ile Pro Met Thr Ser Lys Val Val Val Asp Cys
 195 200 205
 Asn Leu Ile Thr Gly Gln Asn Pro Phe Ser Ser Lys Glu Met Ala Glu
 210 215 220
 Val Val Met Arg Gln Leu Ser Arg Glu Lys
 225 230

<210> 8367

<211> 287

<212> PRT

<213> B.fragilis

<400> 8367

Phe Gly Lys Cys Ile Asn Phe Met Leu Phe Phe Tyr Ile Phe Ala Pro
 1 5 10 15
 Ile Phe Asn Leu Asn Ser Met Thr Met Lys Lys Val Leu Leu Ser Ile
 20 25 30
 Cys Met Val Ser Ala Val Phe Ala Met Ser Ser Cys Gly Ser Thr Lys
 35 40 45
 Glu Ala Ala Ser Leu Ser Ser Leu Asn Gly Glu Trp Asn Ile Ile Glu
 50 55 60
 Val Asn Gly Ser Ala Ile Val Pro Ala Glu Asn Gln Glu Leu Pro Phe
 65 70 75 80
 Ile Gly Phe Asp Thr Ala Thr Gly Lys Val Tyr Gly Asn Ser Gly Cys
 85 90 95
 Asn Arg Met Met Gly Ser Ile Asp Leu Asn Ser Lys Pro Gly Thr Ile
 100 105 110
 Asp Met Ser Arg Leu Gly Ser Thr Arg Met Ala Cys Pro Asp Met Thr
 115 120 125
 Thr Glu Gln Asn Val Leu Asn Ala Leu Gly Gln Val Lys Ser Tyr Lys
 130 135 140
 Lys Leu Gly Lys His Asn Met Ala Leu Cys Asn Ala Ser Asn Arg Pro
 145 150 155 160
 Val Val Val Leu Gln Lys Lys Ala Ser Asp Val Lys Leu Ser Ala Leu
 165 170 175
 Asn Gly Glu Trp Lys Ile Glu Glu Val Asn Gly Glu Ala Ile Pro Ser
 180 185 190
 Gly Met Glu Lys Gln Pro Phe Ile Asn Phe Asp Val Lys Lys Lys Ser
 195 200 205
 Ile His Gly Asn Ala Gly Cys Asn Leu Ile Asn Gly Gly Phe Glu Thr
 210 215 220

Asp Lys Glu Asn Pro Arg Ser Ile Ser Phe Pro Asn Val Ile Ser Thr
 225 230 235 240
 Met Met Ala Cys Pro Asp Met Glu Val Glu Gly Lys Val Met Lys Ala
 245 250 255
 Ile Asn Glu Val Lys Ser Phe Asp Val Leu Ser Gly Gly Gly Ile Gly
 260 265 270
 Phe Tyr Ser Ala Asp Gly Thr Leu Val Met Val Leu Val Lys Lys
 275 280 285

<210> 8368
 <211> 196
 <212> PRT
 <213> B.fragilis

<400> 8368
 Thr Ser Val Cys Tyr Cys His Gly Gln Glu Lys Arg Tyr Val Lys Asn
 1 5 10 15
 Leu Ile Asn Gly Ile Ile Met Lys Val Glu Glu Ile Glu Arg Leu Leu
 20 25 30
 Ala Glu Phe Tyr Glu Gly Thr Thr Thr Glu Ser Gln Glu Glu Val Leu
 35 40 45
 Arg Asn Tyr Phe Arg Thr Thr Glu Val Pro Gly His Leu Leu Lys Asp
 50 55 60
 Lys Glu Ile Phe Leu Asn Leu Cys Pro Asp Ala Asp Gln Asp Ile Glu
 65 70 75 80
 Val Pro Ala His Leu Glu Asp Lys Leu Asn Leu Leu Ile Asp Glu Met
 85 90 95
 Ala Glu Lys Glu Gln His Phe Phe Arg Pro Asn Asn Ser Lys Asn Ser
 100 105 110
 Trp Arg Trp Ile Gly Gly Val Ala Ala Thr Ile Leu Leu Leu Ile Gly
 115 120 125
 Ile Gly Tyr Gly Ile Asp Asn Leu Ser Lys Asn Val Cys Pro Pro Thr
 130 135 140
 Pro Gln Asp Thr Phe Ser Asp Pro Glu Glu Ala Tyr Arg Met Leu Gln
 145 150 155 160
 Ala Thr Leu Leu Glu Ile Ser Ala Asn Leu Asn Tyr Gly Leu Asn Glu
 165 170 175
 Val Lys Glu Ser Gln Ile Asp Met Arg Lys Ile His Gln Glu Val Arg
 180 185 190
 Asn Glu Ile Lys
 195

<210> 8369
 <211> 261
 <212> PRT
 <213> B.fragilis

<400> 8369
 Lys Lys Tyr Arg Met Lys Ile Lys Arg Leu Leu Val Leu Ala Val Leu
 1 5 10 15
 Pro Met Leu Cys Leu Ala Val Asn Ala Gln Asn Ser Ser Lys Asp Asn
 20 25 30
 Thr Pro Lys Lys Gly Asp Phe Thr Val Ala Ala Thr Val Gly Tyr Asn
 35 40 45
 Ser Tyr Thr Ser Val Thr Ala Pro Ser Gly Leu Leu Thr Asp Tyr Glu
 50 55 60
 Val Arg Ala Leu Ser Thr Asn Trp Ala Asp Lys Lys Leu Met Val Gly
 65 70 75 80
 Phe Glu Gly Gly Trp Phe Phe Lys Asp Gln Trp Lys Leu Asn Leu Gly

[illegible]

<400> 8370

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<210> 8371
<211> 340
<212> PRT
<213> B.fragilis
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<400> 8371

Ile	Lys	Pro	Met	Phe	Glu	Arg	Arg	Asn	Ile	Lys	Tyr	Ile	Tyr	Leu	Lys
1				5					10					15	
Leu	Ser	Arg	Lys	Ile	Lys	Asp	Phe	Leu	Leu	Ser	Asp	Lys	Ser	Arg	Glu
			20					25					30		
Phe	Leu	Ile	Phe	Leu	Phe	Phe	Phe	Phe	Ile	Ala	Gly	Gly	Phe	Trp	Leu
			35				40					45			
Leu	Gln	Thr	Leu	Asn	Asn	Asp	Tyr	Glu	Ala	Glu	Phe	Ser	Ile	Pro	Val
						55					60				
Arg	Leu	Lys	Gly	Val	Pro	Asn	His	Val	Val	Leu	Thr	Ser	Glu	Pro	Pro
65					70					75					80
Ser	Glu	Leu	Arg	Ile	Lys	Val	Lys	Asp	Lys	Gly	Thr	Val	Leu	Leu	Asn
				85					90					95	

Tyr Met Leu Gly Lys Ser Phe Phe Pro Val Asn Ile Asp Phe Ser Glu
 100 105 110
 Ser Lys Val Pro Asp Asn His Val Lys Ile Tyr Thr Ser Glu Leu Glu
 115 120 125
 Lys Lys Ile Ala Gly Gln Leu Asn Val Ser Thr Arg Leu Leu Ser Val
 130 135 140
 Lys Pro Asp Thr Leu Glu Tyr Ile Tyr Ser Thr Gly Lys Ser Lys Leu
 145 150 155 160
 Val Pro Val Lys Leu Glu Gly Lys Val Val Ala Gly Arg Gln Tyr Tyr
 165 170 175
 Ile Ser Asp Thr Ile Tyr Ser Pro Asp Ser Val Leu Val Tyr Ala Pro
 180 185 190
 Val Ala Ile Leu Asp Thr Ile Thr Ala Ala Tyr Thr Gln Lys Val Asn
 195 200 205
 Phe Glu Asn Val Met Asp Thr Leu Lys Gln Arg Ile Ala Leu Ala Gly
 210 215 220
 Val Lys Gly Ala Lys Phe Val Pro Gly Ala Ile Asp Leu Thr Leu Pro
 225 230 235 240
 Val Asp Ile Tyr Thr Glu Lys Thr Val Glu Val Leu Leu Arg Gly Ile
 245 250 255
 Asn Phe Pro Ala Asp Lys Val Leu Arg Ala Phe Pro Ser Lys Val Gln
 260 265 270
 Val Thr Phe Gln Val Gly Leu Ser Arg Phe Arg Glu Val Asn Ala Ser
 275 280 285
 Asp Phe Val Val Asn Val Ser Tyr Glu Glu Leu Leu Lys Leu Gly Thr
 290 295 300
 Asp Lys Tyr Thr Val Lys Leu Lys Ser Leu Pro Arg Gly Val Ser His
 305 310 315 320
 Val Arg Ile His Pro Glu Gln Val Asp Phe Leu Ile Glu Gln Leu Ser
 325 330 335
 Ser Asp Gly Asn
 340

<210> 8372
 <211> 113
 <212> PRT
 <213> B.fragilis

<400> 8372

Lys Tyr Ile Phe Phe Ala Lys Asp Leu His Leu Thr Tyr Ser Phe Phe
 1 5 10 15
 Ala Phe Phe Val Thr Lys Phe Leu Leu Arg Leu Lys Asp Ile Asn
 20 25 30
 Ile Asp Lys Asn Glu His Met Asp Thr Glu Ser Phe Lys Arg Glu Phe
 35 40 45
 Leu Pro Tyr His Arg Lys Leu Tyr Cys Val Ala Tyr Arg Leu Leu Glu
 50 55 60
 Asn Ala Ala Asp Ala Glu Asp Leu Val Gln Glu Ala Tyr Leu Lys Leu
 65 70 75 80
 Trp Asp Lys Arg Glu Gly Leu Ser Val Ile Ser Asn Pro Glu Ala Phe
 85 90 95
 Ser Val Thr Leu Val Lys Pro Lys Ile Arg Asn Tyr His Pro Ile His
 100 105 110
 Asp

<210> 8373
 <211> 198
 <212> PRT

<213> B.fragilis

<400> 8373

Gln Asn Ile Ile Met Lys Arg Arg Leu Arg Thr Leu Leu Leu Leu Leu
 1 5 10 15
 Leu Ile Ala Thr Arg Thr Leu Leu Ala Gln Asn Ser His Phe Ala Ser
 20 25 30
 Ser Ser Ser Pro Gly Ser Leu Ser Pro Asp Glu Glu Thr Asp Phe Ile
 35 40 45
 Thr Thr His Phe Pro Leu Lys Gln Leu Cys Lys Trp Thr Pro Gly Met
 50 55 60
 Lys Phe Met Phe Ile Pro Asp Ser Ser Asp Glu Phe Val Pro Ile Leu
 65 70 75 80
 Cys Lys Tyr Glu Asp Gly Lys Glu Val Asp Asn Asp Leu Leu Lys Ser
 85 90 95
 Lys Thr Leu Glu Tyr Thr Gly Ser Glu Glu Thr Val His Glu Thr Tyr
 100 105 110
 Ile Gly Lys Ile Tyr Thr Ser Arg Phe Ile Phe Gln Cys Glu Asp His
 115 120 125
 Lys Tyr Tyr Tyr Glu Met Lys Asp Val Lys Leu Asn Asp Leu Cys Asp
 130 135 140
 Gln Asn Pro Tyr Ala Ser Ile Pro Ala Leu Val Tyr Leu Gln Asp Val
 145 150 155 160
 Asn Lys Ala Lys Glu Leu Leu Ile Gly Lys Thr Leu Tyr Thr Arg Thr
 165 170 175
 Thr Ile Ala Lys Thr Asp Asp Ala Asn Ser Tyr Ser Gly Tyr Arg Glu
 180 185 190
 Val Asn Ile Ala Lys Gly
 195

<210> 8374

<211> 280

<212> PRT

<213> B.fragilis

<400> 8374

Lys Met Thr Ile Asp Asn Gln Thr Gly Leu Val Leu Glu Gly Gly Gly
 1 5 10 15
 Met Arg Gly Val Phe Thr Cys Gly Val Leu Asp Tyr Leu Met Asp His
 20 25 30
 Asp Ile Arg Phe Pro Tyr Thr Ile Gly Val Ser Ala Gly Ala Cys Asn
 35 40 45
 Gly Leu Ser Tyr Met Ser Arg Gln Arg Gly Arg Ala Lys Tyr Ser Asn
 50 55 60
 Ile Asp Leu Leu Glu Lys Tyr His Tyr Ile Gly Leu Lys His Leu Leu
 65 70 75 80
 Lys Lys Arg Asn Ile Leu Asp Phe Asp Leu Leu Phe Thr Glu Phe Pro
 85 90 95
 Glu His Ile Leu Pro Tyr Asp Tyr Gln Ala Tyr Phe Asp Ser Pro Glu
 100 105 110
 Arg Tyr Val Met Val Thr Thr Asn Cys Leu Thr Gly Glu Ala Asp Tyr
 115 120 125
 Phe Glu Glu Lys Lys Asp Lys Asn Arg Val Ile Asp Ile Val Arg Ala
 130 135 140
 Ser Ser Ser Leu Pro Phe Val Cys Pro Ile Ala Tyr Val Asp Gly Ile
 145 150 155 160
 Pro Met Leu Asp Gly Gly Ile Val Asp Ser Ile Pro Leu Gln Arg Ala
 165 170 175
 Ile His Asp Gly Tyr Arg Asn Asn Val Val Val Leu Thr Arg Asn His

180 185 190
 Gly Tyr Arg Lys Glu Asn Lys Asp Ile Arg Ile Pro Pro Phe Val Tyr
 195 200 205
 Arg Lys Tyr Pro Lys Met Arg Glu Ala Leu Ser Arg Arg Cys Ala Val
 210 215 220
 Tyr Asn Glu Gln Leu Glu Met Val Glu Arg Met Glu Glu Glu Gly Asp
 225 230 235 240
 Ile Leu Val Ile Arg Pro Gln Lys Pro Val Val Val Asp Arg Ile Glu
 245 250 255
 Arg Asp Ile Gln Lys Leu Thr Asp Leu Tyr Glu Glu Gly Tyr Glu Cys
 260 265 270
 Ala Lys Arg Gln Leu Glu Thr Leu
 275 280

<210> 8375
 <211> 221
 <212> PRT
 <213> B.fragilis

<400> 8375
 Pro Val Lys Ile Thr Thr Ile Asp Val Gly Asn Lys Ser Phe Pro Val
 1 5 10 15
 Lys Ile Thr Phe Ile Asp Arg Lys Gly Val Ser Tyr Tyr Ile Asn Val
 20 25 30
 Ala Met Ser Arg Thr Asn Ser Gly Met Glu Pro Ala Asp Phe Gln Ala
 35 40 45
 Glu Lys Arg Ile Asn Tyr Phe Pro Asn Ala Phe Ser Phe Thr Asn Pro
 50 55 60
 Asp Val Lys Thr Arg Glu Ser Ile Gln Ser Lys Tyr Ile Gly Gln Ser
 65 70 75 80
 Val Tyr Pro Gln Lys Thr Ile Arg Val Lys Gln Thr Glu Leu Leu Arg
 85 90 95
 Tyr Thr Pro Leu His Ile Lys Asp Val Gln Pro Glu Lys Ala Gly Thr
 100 105 110
 Ser Ala Thr Leu Leu Leu Thr Asp Ile His Gly Asn Thr Tyr Gln Val
 115 120 125
 Lys Val Asp Leu Lys Tyr Asp Pro Ile Leu Lys Asn Glu Asp Phe Ile
 130 135 140
 Glu Asp Leu Phe Gly Phe Ser Asp Ile Arg Lys Lys Tyr Pro Asn Ile
 145 150 155 160
 Ser Glu Ser Asn Trp Leu Met Leu Ala Lys Gly Glu Val Lys Pro Gly
 165 170 175
 Met Thr Thr Glu Glu Cys Lys Leu Ala Ile Gly Glu Pro Ile Glu Ile
 180 185 190
 Arg Val Arg Thr Asp Ser Arg Phe Glu Thr Trp Leu Tyr Arg Gly Lys
 195 200 205
 Ile Leu Glu Phe Glu Asn Gly Ile Leu Leu Arg Ala Lys
 210 215 220

<210> 8376
 <211> 114
 <212> PRT
 <213> B.fragilis

<400> 8376
 Cys Cys Gly Ile Lys Val Lys Asn Met Cys Phe Asp Leu Leu Arg Ser
 1 5 10 15
 Gly Lys Tyr Val Leu Ser Arg Gln Ser Val Glu Leu Ser Ala Ala Gln
 20 25 30


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<210> 8377
<211> 542
<212> PRT
<213> B.fragilis
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Lys	Ile	Glu	Ile	Met	Lys	Lys	Lys	Leu	Met	Val	Ala	Val	Leu	Leu	
1				5				10					15		
Gly	Ala	Leu	Ser	Leu	Gly	Ala	Cys	Val	Asp	Asn	Asn	Glu	Ser	Ala	Ser
			20					25				30			
Val	Glu	Ala	Val	Arg	Asn	Ala	Lys	Ala	Lys	Gln	Leu	Glu	Ser	Val	Ala
		35					40					45			
Asn	Met	Asn	Asn	Ala	Asn	Ala	Asp	Ala	Lys	Lys	Ala	Ile	Thr	Ala	Ala
	50					55					60				
Glu	Val	Ala	Ile	Lys	Glu	Ala	Glu	Ala	Ala	Tyr	Gln	Lys	Ala	Gln	Ala
65					70					75					80
Glu	Leu	Ala	Gln	Ala	His	Ala	Asp	Gln	Gln	Lys	Ile	Leu	Leu	Glu	Lys
				85					90					95	
Ala	Gln	Ala	Ala	Leu	Glu	Ala	Glu	Leu	Glu	Ala	Ala	Lys	Ile	Asn	Ala
			100					105					110		
Glu	Ala	Glu	Leu	Asn	Asn	Ala	Lys	Ala	Ala	Leu	Glu	Ser	Ala	Lys	Ala
		115					120					125			
Ala	Leu	Ile	Ala	Ala	Leu	Asp	Gln	Val	Asp	Gln	Ala	Asn	Lys	Thr	Arg
		130				135					140				
Ile	Thr	Thr	Leu	Leu	Gly	Lys	Ala	Asn	Gly	Leu	Leu	Ala	Thr	Ile	Asn
145					150					155					160
Ala	Asp	Arg	Gln	Ser	Leu	Ile	Asp	Ala	Lys	Asp	Gln	Leu	Ala	Arg	Leu
				165						170				175	
Lys	Ala	Gly	Leu	Val	Ser	Val	Glu	Leu	Ser	Asn	Gln	Gln	Thr	Ile	Ala
			180					185					190		
Gly	Glu	Glu	Lys	Asn	Lys	Ala	Val	Ala	Gln	Ala	Leu	Ile	Ala	Glu	Tyr
		195					200					205			
Glu	Lys	Tyr	Ser	Thr	Lys	Asp	Lys	Ala	Asp	Ala	Glu	Lys	Ala	Ala	Gln
	210					215					220				
Glu	Ala	Asn	Ala	Lys	Leu	Thr	Ala	Leu	Gly	Gln	Thr	Arg	Asp	Glu	Lys
225					230					235				240	
Asn	Thr	Ala	Asp	Arg	Asn	Ala	Gln	Gln	Ala	Tyr	Trp	Glu	Ala	Tyr	Arg
				245					250					255	
Asn	Leu	Asn	Gly	Ser	Leu	Tyr	Val	Arg	Thr	Leu	Gln	Gln	Ala	Gly	Pro
			260					265					270		
Ser	Tyr	Tyr	Asp	Thr	Glu	Asp	Ile	Arg	Gly	Glu	Val	Val	Asn	Tyr	Thr
		275					280					285			
Asn	Asp	Asp	Ser	Thr	Thr	Gly	Thr	Val	Tyr	Pro	Ser	Ser	Tyr	Thr	Lys
	290					295					300				
Tyr	Ile	Pro	Asn	Leu	Asp	Arg	Ile	Asn	Glu	Ala	Ile	Thr	Asn	Gln	Thr
305					310					315					320

[illegible]

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<210> 8378
<211> 302
<212> PRT
<213> B.fragilis
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Ala	Phe	Ile	Phe	Met	Ser	Asp	Phe	Arg	Leu	Lys	Val	Phe	Leu	Ser	Val
1				5					10					15	
Ala	Lys	Asn	Leu	Ser	Phe	Thr	Lys	Ala	Ser	Gln	Glu	Leu	Phe	Val	Ser
			20					25					30		
Gln	Pro	Ala	Ile	Thr	Lys	His	Ile	Gln	Glu	Leu	Glu	Thr	Cys	Tyr	Gln
		35					40					45			
Val	Arg	Leu	Phe	Asp	Arg	Gln	Gly	Asn	Lys	Ile	Ser	Leu	Thr	Glu	Ala
	50					55					60				
Gly	Lys	Leu	Leu	Gln	Glu	His	Ser	Glu	Lys	Ile	Leu	Glu	Asp	Tyr	Lys
65				70						75				80	
Arg	Leu	Glu	Tyr	Glu	Met	His	Leu	Leu	His	Asn	Glu	Tyr	Ile	Gly	Asp
			85					90					95		
Leu	Lys	Leu	Gly	Ala	Ser	Thr	Thr	Ile	Ser	Gln	Tyr	Val	Leu	Pro	Pro
		100					105					110			
Leu	Leu	Ala	Asn	Phe	Ile	Ala	Lys	Phe	Pro	Gln	Val	Asn	Leu	Ser	Leu
		115					120					125			
Leu	Asn	Gly	Asn	Ser	Arg	Glu	Ile	Glu	Ala	Ala	Leu	Gln	Glu	His	Arg
	130					135					140				
Ile	Asp	Leu	Gly	Leu	Val	Glu	Gly	Ile	Cys	Arg	Leu	Pro	Asn	Leu	Arg
145				150					155					160	
Tyr	Thr	Thr	Phe	Leu	Gln	Asp	Glu	Leu	Val	Ala	Val	Val	His	Thr	Gly
			165					170					175		
Ser	Lys	Leu	Ser	Leu	Pro	Asp	Glu	Ile	Thr	Pro	Glu	Asp	Leu	Ser	Arg
		180					185					190			

Ile Pro Leu Val Leu Arg Glu Arg Gly Ser Gly Thr Leu Asp Val Phe
 195 200 205
 Glu Arg Ala Leu Ser Glu His Asn Met Lys Leu Ser Ser Leu Asn Val
 210 215 220
 Leu Leu Tyr Leu Gly Ser Thr Glu Ser Ile Lys Leu Phe Leu Glu His
 225 230 235 240
 Thr Asp Cys Ile Gly Ile Val Ser Ile Arg Ser Ile Ser Arg Glu Leu
 245 250 255
 Leu Ser Gly Thr Phe Arg Val Ile Glu Ile Lys Gly Met Pro Met Leu
 260 265 270
 Arg Glu Phe Cys Phe Ala Gln Pro Gln Gly Gln Glu Ser Gly Leu Ser
 275 280 285
 Gln Val Leu Met Gln Phe Ala Met His His Asn Lys Lys Leu
 290 295 300

<210> 8379

<211> 338

<212> PRT

<213> B.fragilis

<400> 8379

Asn Thr Ala Leu Lys Asn Val Ile Tyr Leu Cys Lys Leu Ile Lys Asn
 1 5 10 15
 Val Tyr Phe Cys Asn Ser Leu Ile Thr Val Leu Ile Lys Ile Met Ile
 20 25 30
 Asn Arg Val Leu Ile Arg Leu Lys Ile Ile Gln Ile Val Tyr Ala Tyr
 35 40 45
 Tyr Gln Asn Gly Ser Lys Asn Leu Asp Ser Ala Glu Lys Glu Leu Phe
 50 55 60
 Phe Ser Leu Ser Lys Ala Tyr Asp Leu Tyr Asn Tyr Leu Leu Met Leu
 65 70 75 80
 Met Ile Ala Leu Thr Glu Tyr Ala Gln Lys Arg Ile Asp Thr Ala Lys
 85 90 95
 Ala Lys Leu Ala Pro Thr Lys Glu Glu Leu Tyr Pro Asn Met Lys Phe
 100 105 110
 Val Glu Asn Lys Phe Val Ala Gln Leu Glu Val Asn Lys Gln Leu Ser
 115 120 125
 Glu Phe Ile Ala Asn Gln Lys Arg Thr Trp Ala Asn Asp Gln Asp Phe
 130 135 140
 Ile Lys Glu Leu Tyr Glu Lys Ile Ile Ala Ser Asp Ile Tyr Lys Glu
 145 150 155 160
 Tyr Met Ala Ser Ser Asp Lys Ser Tyr Glu Ala Asp Arg Glu Leu Trp
 165 170 175
 Arg Lys Leu Tyr Lys Thr Phe Val Phe Asn Asn Asp Ser Leu Asp Gln
 180 185 190
 Val Leu Glu Asp Gln Ser Leu Tyr Trp Asn Asp Asp Lys Glu Ile Val
 195 200 205
 Asp Thr Phe Val Leu Lys Thr Ile Lys Arg Phe Glu Glu Lys Gln Gly
 210 215 220
 Ala Asn Gln Pro Leu Leu Pro Glu Phe Lys Asp Asp Glu Asp Gln Glu
 225 230 235 240
 Phe Ala Arg Arg Leu Phe Arg Arg Ala Ile Leu Asn Ala Asp Tyr Tyr
 245 250 255
 Arg His Leu Ile Ser Glu Asn Thr Lys Asn Trp Asp Leu Asp Arg Val
 260 265 270
 Ala Phe Met Asp Val Ile Ile Met Gln Cys Ala Leu Ala Glu Ile Leu
 275 280 285
 Ser Phe Pro Asn Ile Pro Val Ser Val Ser Leu Asn Glu Tyr Val Glu
 290 295 300

Ile Ala Lys Leu Tyr Ser Thr Val Lys Ser Gly Ser Phe Ile Asn Gly
 305 310 315 320
 Thr Leu Asp Gly Ile Val Asn Gln Leu Lys Lys Glu Gly Lys Leu Thr
 325 330 335
 Lys Asn

<210> 8380
 <211> 202
 <212> PRT
 <213> B.fragilis

<400> 8380
 His Lys Lys Phe Gln Glu Met Arg Ser Ile Glu Val Lys Gly Thr Ala
 1 5 10 15
 Arg Thr Ile Ala Glu Arg Ser Ser Glu Gln Ala Arg Ala Leu Lys Glu
 20 25 30
 Ile Arg Asn Asn Gly Gly Val Pro Cys Val Leu Tyr Gly Gly Glu Glu
 35 40 45
 Val Val His Phe Thr Val Thr Asn Glu Gly Leu Arg Asn Leu Val Tyr
 50 55 60
 Thr Pro His Ile Tyr Val Val Asp Leu Val Ile Asp Gly Lys Lys Val
 65 70 75 80
 Asn Ala Ile Leu Lys Asp Ile Gln Phe His Pro Val Lys Asp Thr Ile
 85 90 95
 Leu His Val Asp Phe Tyr Gln Ile Asp Glu Ala Lys Pro Ile Val Met
 100 105 110
 Glu Val Pro Val Gln Leu Glu Gly Leu Ala Glu Gly Val Lys Ala Gly
 115 120 125
 Gly Lys Leu Ala Leu Gln Met Arg Lys Leu Lys Val Lys Ala Leu Tyr
 130 135 140
 Asn Ile Ile Pro Glu Lys Leu Thr Ile Asn Val Ser His Leu Gly Leu
 145 150 155 160
 Gly Lys Thr Val Lys Val Gly Glu Leu Ser Tyr Glu Gly Leu Glu Leu
 165 170 175
 Leu Asn Ala Lys Glu Ala Val Val Cys Ala Val Lys Leu Thr Arg Ala
 180 185 190
 Ala Arg Gly Ala Ala Ala Ala Ala Gly Lys
 195 200

<210> 8381
 <211> 108
 <212> PRT
 <213> B.fragilis

<400> 8381
 Gln Glu Glu Phe Cys Tyr Lys Glu Ser Glu Lys Arg Ile Ser Lys Met
 1 5 10 15
 Lys Ile Phe Gly Glu Lys Asp Val Leu Leu Met Thr Glu Leu Lys Ile
 20 25 30
 Asp Thr Met Ser Gln Asn Glu Thr Thr Lys Leu Asp Ile Ile Val Glu
 35 40 45
 Val Leu Gly Glu Arg Glu Pro Glu Ile Arg Arg Leu Val Ile Leu Asp
 50 55 60
 Asp Arg Leu Arg Met Phe Ala Glu Ser Asn Asp Glu Asn Gly Pro Gly
 65 70 75 80
 Ile Pro Ile Glu Leu Val Ala Glu Trp Ala Thr Leu Leu Asn Lys Tyr
 85 90 95
 Tyr Pro Leu Ala Leu Glu Lys Arg Asn Met Met Asn

100

105

<210> 8382
 <211> 195
 <212> PRT
 <213> B.fragilis

<400> 8382

Ile Ser Lys Ser Met Lys Pro Asn Arg Thr Lys Glu Asp Ile Leu Leu
 1 5 10 15
 Leu Ser Gln Leu Gln Gln Gly Asp Lys Lys Ala Phe Asn Thr Leu Phe
 20 25 30
 Arg Arg Tyr Tyr Pro Ile Leu Cys Ala Tyr Ala His Arg Phe Val Asp
 35 40 45
 Leu Glu Asp Ala Glu Glu Ile Val Gln Asp Val Met Leu Trp Leu Trp
 50 55 60
 Glu Asn Arg Glu Ile Leu Leu Ile Glu Ser Ser Leu Ser Gln Tyr Leu
 65 70 75 80
 Leu Lys Met Ile Tyr His Arg Ser Leu Asn Arg Ile Ala Gln Lys Glu
 85 90 95
 Val Lys Tyr Arg Ala Asp Thr Leu Phe Tyr Glu Lys Ser Gln Ala Met
 100 105 110
 Ile Tyr Asp Val Asp Phe Tyr Gln Ile Glu Glu Leu Thr Lys Arg Ile
 115 120 125
 His Thr Ala Ile Val Glu Leu Pro Glu Ser Tyr Arg Glu Ala Phe Ile
 130 135 140
 Met His Arg Phe Arg Asp Met Ser Tyr Lys Glu Ile Ala Gln Thr Leu
 145 150 155 160
 Asn Thr Ser Thr Lys Thr Val Asp Tyr Arg Ile Gln Gln Ala Leu Lys
 165 170 175
 Leu Leu Arg Lys Glu Leu Lys Glu Phe Leu Ser Phe Ala Leu Ile Phe
 180 185 190
 Leu Ala Ala
 195

<210> 8383
 <211> 132
 <212> PRT
 <213> B.fragilis

<400> 8383

Leu Ser Gly Pro Val Gln Pro Arg Gly Glu Asp Asn Gly Thr Val Val
 1 5 10 15
 Arg Trp Asp Cys Ser Val Leu Leu Glu Asn Ala Gly Phe Lys Asp Ala
 20 25 30
 Tyr Arg Thr Lys Tyr Pro Asn Pro Val Thr His Pro Gly Phe Thr Phe
 35 40 45
 Pro Ser Asp Asn Glu Gly Val Pro Val Gln Lys Leu Ser Trp Ala Pro
 50 55 60
 Asp Ala Asp Glu Arg Asp Arg Ile Asp Phe Ile Tyr Phe Met Pro Asp
 65 70 75 80
 Arg Lys Leu Lys Leu Lys Asp Val Ser Val Val Gly Pro Ser Lys Ser
 85 90 95
 Ile Val Arg Ser Glu Arg Val Glu Glu Ser Gly Lys Asp Ser Phe Ile
 100 105 110
 Thr Pro Leu Gly Val Trp Pro Thr Asp His Lys Ala Val Met Ala Thr
 115 120 125
 Phe Ser Leu Arg
 130

<210> 8384
 <211> 612
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (596), (603), (604), (608), (610)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 8384
 Lys Ser Lys Pro Cys Glu Leu Val Trp Arg Gln Ala Glu Ile Asn Tyr
 1 5 10 15
 Phe Leu Thr Leu Ser Gln Tyr Lys Ile Met Gln Asn Tyr Phe Ser Ile
 20 25 30
 Gln Leu Leu Arg Val Val Lys Ser Ser Leu Trp Leu Thr Ser Lys Lys
 35 40 45
 Ile Pro Lys Thr Met Arg Leu Phe Ile Leu Phe Leu Ile Cys Ser Met
 50 55 60
 Ser Phe Val His Ala Thr Asp Ser Phe Ala Gln Lys Val Glu Ile Ser
 65 70 75 80
 Ile Asp Ala Gln Asn Gln Thr Val Glu Lys Val Leu Lys Glu Ile Glu
 85 90 95
 Lys Gln Ser Gly Phe Gly Phe Phe Phe Asn Asn Lys His Val Asn Leu
 100 105 110
 Lys Arg Val Val Ser Val Ser Val Asp Lys Ser Asn Ile Phe Lys Val
 115 120 125
 Leu Asp Lys Ile Phe Glu Gly Thr Asp Val Lys Tyr Ser Val Leu Asp
 130 135 140
 Lys Lys Ile Ile Leu Ser Thr Glu Met Thr Ser Lys Gln Gln Gln Ala
 145 150 155 160
 Val Lys Ile Ser Gly Lys Val Val Asp Val Asn Gly Glu Pro Val Ile
 165 170 175
 Gly Ala Ser Ile Val Glu Lys Gly Thr Thr Asn Gly Thr Val Thr Asn
 180 185 190
 Leu Gln Gly Asp Phe Ser Leu Ser Val Ser Ser Asp Lys Ala Val Ile
 195 200 205
 Glu Ile Ser Tyr Ile Gly Tyr Gln Pro Gln Glu Leu Lys Val Ile Ala
 210 215 220
 Gly Lys Pro Leu Asn Val Thr Met Lys Glu Asp Ala Gln Ala Leu Glu
 225 230 235 240
 Glu Val Val Val Val Gly Tyr Gly Ser Gln Lys Lys Val Asn Val Ile
 245 250 255
 Gly Ser Ile Ala Ala Val Asp Ser Lys Lys Leu Glu Ser Arg Thr Ala
 260 265 270
 Pro Ser Val Ser Asn Met Leu Thr Gly Gln Leu Ser Gly Val Thr Ile
 275 280 285
 Thr Gln Ser Ser Gly Asn Pro Gly Gln Asp Gln Gly Thr Ile Arg Val
 290 295 300
 Arg Gly Val Gly Ser Phe Gly Ala Thr Pro Asp Pro Leu Val Leu Val
 305 310 315 320
 Asp Gly Leu Pro Gly Ser Leu Asn Asp Leu Asn Pro Ala Asp Ile Glu
 325 330 335
 Ser Ile Ser Ile Leu Lys Asp Ala Ser Ser Ala Ala Ile Tyr Gly Ser
 340 345 350
 Arg Ala Ala Asn Gly Val Val Leu Val Lys Thr Lys Gly Gly Gln Lys
 355 360 365
 Gly Lys Val Thr Val Ser Tyr Asn Gly Tyr Val Gly Phe Asn Gln Ala

370 375 380
 Thr Glu Leu Pro Glu Met Cys Asp Ser Trp Glu Tyr Ala Glu Leu Tyr
 385 390 395 400
 Asn Lys Ala Met Gly Lys Glu Val Tyr Ser Ala Glu Glu Ile Gln Lys
 405 410 415
 Tyr Lys Asp Gly Ser Asp Pro Tyr Asn Tyr Pro Asn Glu His Tyr Leu
 420 425 430
 Asp Lys Leu Gly Asn Lys Gly Leu Gln Thr Gly His Glu Leu Thr
 435 440 445
 Val Asn Gly Gly Asn Asp Lys Thr Gln Tyr Met Val Ser Phe Gly Tyr
 450 455 460
 Val Lys Gln Asn Gly Leu Met Glu His Asn His Tyr Asp Arg Tyr Asn
 465 470 475 480
 Gly Arg Val Asn Leu Thr Thr Glu Leu Ala Lys Lys Leu Thr Leu Thr
 485 490 495
 Thr Arg Leu Gly Gly Val Val Ser Lys Arg Ser Glu Pro Ser Thr Pro
 500 505 510
 Gly Gly Met Asp Ser Ala Gly Phe Lys Ala Phe Ser Ser Asn Ala Leu
 515 520 525
 Arg Phe Pro Gly Leu Trp Ala Thr Lys Leu Glu Asp Gly Ser Tyr Gly
 530 535 540
 Leu Gly Pro Lys Val Leu Gly Thr Pro Leu Ala Trp Leu Asp Ser Gly
 545 550 555 560
 Ser Phe Tyr His Glu Asn Phe His Lys Phe Arg Ser Asn Val Glu Leu
 565 570 575
 Ala Phe Thr Pro Val Lys Gly Leu Thr Leu Lys Ala Ser Ser Pro Arg
 580 585 590
 Gly Trp Ser Xaa Arg Ser Ala Leu Ser Phe Xaa Xaa Ser Tyr Pro Xaa
 595 600 605
 Gly Xaa Ser Ile
 610

<210> 8385
 <211> 385
 <212> PRT
 <213> B.fragilis

<400> 8385
 Phe Gly Glu Tyr Arg Gly Tyr Cys Arg Gln Val Phe Ile Ser Leu Leu
 1 5 10 15
 Leu Asn Phe Tyr Leu Arg Tyr Leu Asn Val Ile Leu Met Asn Arg Lys
 20 25 30
 Asn Tyr Leu Leu Ala Phe Ile Leu Cys Val Gln Thr Leu Phe Val Ser
 35 40 45
 Ala Gln Val Tyr Pro Val Arg Ala Lys Leu Thr Asp Glu Lys Ser Phe
 50 55 60
 Ser Met Ile Leu Leu Pro Asp Pro Tyr Ser Tyr Thr Met Val Asp Ala
 65 70 75 80
 His Tyr Ala Leu Phe Glu Leu Gln Thr Ala Trp Val Ala Asn Ser Ile
 85 90 95
 Glu Ser Leu Asn Ile Lys Gly Val Leu Cys Thr Gly Asp Leu Val Glu
 100 105 110
 Gln Asn Glu Ile Arg Ile Pro Asp Gly Val Asn Gly Asn Gln Thr Ser
 115 120 125
 Glu Glu Gln Trp Arg Ala Ala Ser Arg Ala Phe Glu Arg Leu Asp Gly
 130 135 140
 Lys Leu Pro Tyr Val Ile Cys Thr Gly Asn His Asp Tyr Gly Tyr Gln
 145 150 155 160
 Lys Ala Glu Asn Arg Leu Cys His Phe Pro Asp Tyr Phe Pro Ala Glu

[illegible]

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<210> 8386
<211> 338
<212> PRT
<213> B.fragilis
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Ile	Thr	Asn	Met	Asn	Tyr	Glu	Asp	Ile	Asp	His	Leu	Leu	Pro	Arg	Tyr
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Cys	Glu	Gly	Leu	Ala	Thr	Glu	Glu	Glu	Cys	Arg	Gln	Val	Glu	Ser	Trp
			20					25					30		
Met	Glu	Glu	Ser	Glu	Asp	Asn	Arg	Lys	Ile	Val	Asp	Gln	Ile	Asn	Thr
			35				40					45			
Leu	Tyr	Ile	Ala	Val	Asp	Thr	Val	Asn	Val	Met	Arg	Lys	Val	Asp	Thr
	50					55					60				
Glu	Lys	Ala	Leu	Lys	Lys	Val	Ser	Ser	Arg	Met	Ile	Val	Arg	Lys	Thr
65					70					75					80
Thr	Trp	Trp	Glu	Trp	Met	Gln	Arg	Val	Ala	Ala	Ile	Leu	Phe	Ile	Pro
				85					90					95	
Leu	Ser	Val	Ala	Phe	Leu	Val	Gln	Tyr	Met	His	Asn	Gly	Lys	Ser	Ala
			100					105					110		
Val	Cys	Gln	Met	Met	Glu	Ile	Lys	Thr	Asn	Pro	Gly	Met	Thr	Thr	Ser
			115				120					125			
Val	Val	Leu	Pro	Asp	Ser	Thr	Val	Val	Tyr	Leu	Asn	Ser	Glu	Ser	Ser
	130					135					140				
Leu	Arg	Tyr	Pro	Ser	Val	Phe	Glu	Gly	Asp	Ile	Arg	Asn	Val	Glu	Leu
145					150					155					160
Lys	Gly	Glu	Ala	Tyr	Phe	Ala	Val	Ala	Lys	Asp	Leu	Lys	Lys	Lys	Phe
				165					170					175	
Val	Val	Ser	Ala	Pro	His	Ser	Ser	Gln	Ile	Glu	Val	Leu	Gly	Thr	His

180 185 190
 Phe Asn Val Glu Ala Tyr Glu Asp Glu Pro Asp Val Ser Thr Thr Leu
 195 200 205
 Val Glu Gly Gln Val Cys Phe His Phe Ser Asp Lys Asp Tyr Leu Ala
 210 215 220
 Lys Lys Val Val Met Lys Pro Gly Gln Arg Leu Val Tyr Ser Ser Thr
 225 230 235 240
 Asn Gly Asp Val Gln Leu Tyr Ala Thr Ser Cys Leu Ser Glu Thr Ala
 245 250 255
 Trp Lys Asp Gly Lys Ile Ile Phe Asn Asn Thr Pro Leu Asp Val Ala
 260 265 270
 Leu Arg Met Leu Glu Lys Arg Phe Asn Val Thr Phe Lys Leu Lys Asn
 275 280 285
 Ala Arg Leu Lys Thr Asn Ala Phe Thr Gly Thr Phe Thr Glu Gln Arg
 290 295 300
 Leu Glu Arg Ile Leu Glu Tyr Phe Lys Ile Ser Ser Lys Ile Gln Trp
 305 310 315 320
 Arg Tyr Leu Glu Ser Pro Asp Ile Arg Asp Glu Arg Ser Ile Ile Glu
 325 330 335
 Val Tyr

<210> 8387
 <211> 96
 <212> PRT
 <213> B.fragilis

<400> 8387
 Arg Lys Ser Arg Ser Met Gly Lys Ser Gly Ser Ser Ser Asn Arg Ser
 1 5 10 15
 Val Thr Ile Ser Ser Gln Lys Glu Asp Ile Tyr Gln Gly Arg Asp Phe
 20 25 30
 Ala Asp Leu Glu Pro Gly Glu Phe Ile Gly Ser Ala Thr Arg Ala Asn
 35 40 45
 Val Arg Tyr Phe Lys Val Met Leu Gly Glu Phe Lys Glu Lys Asp Glu
 50 55 60
 Lys Pro Leu Pro Asp Val Arg Val Leu Glu Pro Gly Glu Ile Ser Gly
 65 70 75 80
 Asn Phe Ala Arg Ile Leu Glu Glu Val Arg Ser Leu Phe Pro Cys Glu
 85 90 95

<210> 8388
 <211> 101
 <212> PRT
 <213> B.fragilis

<400> 8388
 Ala Pro Val Ile Gly Met Leu Met Ser Ile Ser Thr Arg Gln Phe Thr
 1 5 10 15
 Met Gln Asn Lys Val Pro Phe Val Tyr Phe Leu Asp Glu Met Thr Thr
 20 25 30
 Val Asn Ile Lys Ser Phe Glu Ser Leu Leu Ser Val Met Arg Glu Asn
 35 40 45
 Lys Val Ala Phe Val Leu Leu Thr Gln Ser Gly Ser Lys Leu Glu Asn
 50 55 60
 Leu Tyr Gly Lys Leu Asp Arg Ser Ser Val Glu Ala Asn Phe Gly Ile
 65 70 75 80
 Gln Phe Phe Gly Arg Thr Lys Asp Val Glu Ala Leu Lys Tyr Tyr Pro
 85 90 95

Gln Met Phe Gly Lys
100

<210> 8389
<211> 216
<212> PRT
<213> B.fragilis

<400> 8389

Ala	Leu	Ser	Val	Pro	Ser	Ser	Pro	Val	Val	Lys	Thr	Ala	Gln	Met	Lys
1				5					10					15	
Lys	Phe	Thr	Arg	Glu	Cys	Met	Asp	Glu	Tyr	Ala	Arg	Asn	Phe	Tyr	Arg
			20					25					30		
Glu	Lys	Ile	Lys	Ser	Gly	Asp	Asp	Leu	Val	Trp	Tyr	Gly	Arg	Val	Glu
		35				40						45			
Thr	Glu	Arg	His	Tyr	Lys	Asn	Asp	Asp	Pro	Glu	Val	Lys	Ala	Gly	Arg
		50				55					60				
Ala	Lys	Ala	Gly	Asp	Lys	Lys	Pro	Gly	Leu	Gln	Leu	His	Val	His	Val
65					70					75				80	
Ile	Val	Ser	Arg	Met	Asp	Arg	Thr	Gln	Thr	Val	Ser	Leu	Ser	Pro	Leu
				85				90					95		
Ser	Lys	Ser	Arg	Gly	Asn	Arg	Gln	Val	Leu	Glu	Gly	Arg	Glu	Val	Val
			100					105					110		
Val	Gly	Phe	Asp	Arg	Ser	Gln	Trp	Ser	Ser	Arg	Cys	Ala	Ser	Arg	Phe
		115					120					125			
Asn	Gln	Ser	Tyr	Asp	Tyr	Phe	Pro	Asn	Tyr	Tyr	Ser	Arg	Asp	Glu	Ser
		130				135						140			
Leu	Arg	Lys	Tyr	Ser	Glu	Asn	Trp	Gln	Ala	Lys	Asn	Glu	Leu	Lys	Asn
145					150					155				160	
Glu	Ala	Val	Ser	Lys	Leu	Lys	Gln	Glu	Val	Leu	Lys	Gly	Glu	Leu	Lys
				165				170					175		
Glu	Glu	Arg	Arg	Leu	Tyr	Ala	Asn	Thr	Phe	Arg	Ile	Tyr	Arg	Phe	Val
			180					185					190		
Val	Asn	Pro	Lys	Lys	Ala	Ile	Ile	Gln	Glu	Leu	Lys	Arg	Leu	Gly	Thr
		195					200						205		
Asp	Leu	Leu	Ser	Gly	Arg	Asp	Leu								
		210				215									

<210> 8390
<211> 439
<212> PRT
<213> B.fragilis

<400> 8390

Tyr	Ile	Met	Ser	Lys	Ile	Gln	Leu	Arg	Gln	Val	Tyr	Arg	Asp	Gln	Leu
1				5					10					15	
Tyr	Asn	Tyr	Arg	Pro	Thr	Trp	Ile	Leu	Arg	Trp	Gly	Ile	Thr	Ile	Phe
			20					25					30		
Phe	Val	Phe	Leu	Leu	Leu	Val	Ile	Ser	Val	Ser	Gly	Phe	Ile	Arg	Tyr
		35				40						45			
Pro	Asp	Ile	Val	Pro	Ala	Thr	Val	Glu	Ile	Thr	Thr	Ile	Asn	Pro	Pro
		50				55					60				
Ala	Asn	Leu	Ile	Ser	Lys	Val	Asn	Gly	Lys	Ile	Glu	Ile	Ile	Phe	Thr
65					70				75					80	
Glu	Glu	Gly	Glu	Ser	Ile	Thr	Lys	Gly	Gln	Val	Leu	Ala	Ile	Leu	Glu
				85				90						95	
Ser	Pro	Ala	Gln	Trp	Lys	Asp	Met	Lys	Ile	Leu	Asp	His	Tyr	Ile	Thr
			100					105					110		
Val	Leu	Glu	Asn	Thr	Ile	Gly	Lys	Asp	Ser	Leu	Ser	Val	Ile	Pro	Glu

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      115              120              125
Pro Asp Phe Leu Arg Asn Asp Leu Glu Leu Gly Glu Val Gln Gly Arg
  130              135              140
Tyr Ala Asp Leu Lys Leu Asn Tyr Thr Glu Leu Tyr Asn Phe Leu His
  145              150              155              160
Ser Gly Leu Phe Glu Glu Glu Val Leu Ser Leu Gln Glu Lys Lys Gln
      165              170              175
Ala Gln Lys Gln Leu Leu Val Gln Glu Asn Arg Lys Arg Glu Leu Leu
      180              185              190
Lys Thr Gln Ile Arg Leu Ala Asp Lys Glu Tyr Gln Arg Asp Ser Ile
      195              200              205
Leu Phe Val Lys Glu Val Ile Ser Glu Ser Glu Ile Glu Gln Arg His
      210              215              220
Gln Asn Arg Leu Gln Phe Gln Ser Ser Leu Val Asp Met Glu Val Asn
  225              230              235              240
Ile Leu Asn Ile Lys Ser Ser Leu Lys Gln Leu Arg Ser Asp Leu Lys
      245              250              255
Lys Ile Glu Leu Lys His Asn Thr Asp Arg Gln Glu Leu Thr Asn Lys
      260              265              270
Leu Leu Gln Ser Thr His Leu Leu Lys Ala Gln Thr Glu Thr Trp Lys
      275              280              285
Gln Asn Tyr Leu Ile Thr Thr Pro Ile Asp Gly Lys Val Ser Phe Thr
  290              295              300
Thr Tyr Trp Ser Lys Asn Gln Asn Val Lys Ser Gly Glu Leu Ile Phe
  305              310              315              320
Ser Val Val Pro Ile Asp Ser Met Thr Thr Lys Ala Arg Leu Gln Phe
      325              330              335
Pro Ile Gln Asn Ser Gly Lys Ile Lys Glu Gly Gln Gln Val Asn Ile
      340              345              350
Lys Leu Gln Asn Tyr Pro Tyr Gln Glu Phe Gly Met Leu Val Gly His
      355              360              365
Leu Ser Lys Ile Ser Glu Val Pro Asn Glu Leu Leu Tyr Ser Ala Asp
      370              375              380
Val Val Leu Asp Lys Gly Leu Ile Thr Ser Tyr Gly Lys Arg Leu Pro
  385              390              395              400
Lys Val Gln Gln Leu Lys Gly Asp Ala Glu Ile Leu Thr Asp Asp Leu
      405              410              415
Ser Leu Leu Met Arg Phe Phe Asn Pro Leu Arg Ala Ile Phe Asp His
      420              425              430
Arg Leu Arg Lys His Asn Gln
      435

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<210> 8391

<211> 441

<212> PRT

<213> B.fragilis

<400> 8391

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Leu Cys Met Ser Met Asn Lys Gln Met His Ile Ser Asn Gly Asn Lys
1              5              10              15
Arg Ile Leu Gln Ile Ala Val Pro Ser Ile Ile Ser Asn Ile Thr Val
      20              25              30
Pro Leu Leu Gly Leu Val Asp Val Thr Ile Val Gly His Leu Gly Ser
      35              40              45
Ala Ala Tyr Ile Gly Ala Ile Ala Val Gly Gly Met Leu Phe Asn Ile
      50              55              60
Ile Tyr Trp Ile Phe Gly Phe Leu Arg Met Gly Thr Ser Gly Met Thr
  65              70              75              80
Ser Gln Ala Phe Gly Gln Arg Asn Leu Glu Glu Val Thr Lys Leu Leu

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85 90 95
 Leu Arg Ser Val Gly Val Gly Leu Phe Ile Ala Leu Cys Leu Met Thr
 100 105 110
 Leu Gln Tyr Pro Ile Gln Lys Ala Ala Phe Ala Phe Ile Gln Thr Ser
 115 120 125
 Asp Glu Val Glu Arg Leu Ala Thr Leu Tyr Phe Arg Ile Cys Ile Trp
 130 135 140
 Gly Ala Pro Ala Met Leu Gly Leu Tyr Gly Phe Ala Gly Trp Phe Ile
 145 150 155 160
 Gly Met Gln Asn Ser Arg Phe Pro Met Tyr Ile Ala Ile Thr Gln Asn
 165 170 175
 Ile Val Asn Ile Leu Ala Ser Leu Cys Phe Val Phe Leu Phe Gly Met
 180 185 190
 Lys Val Glu Gly Val Ala Leu Gly Thr Leu Ile Ala Gln Tyr Ala Gly
 195 200 205
 Phe Leu Met Ala Leu Leu Leu Trp Leu Arg Tyr Tyr Lys Gln Leu Arg
 210 215 220
 Lys Arg Val His Trp Arg Gly Ile Trp Gln Lys Gln Ala Met Tyr Arg
 225 230 235 240
 Phe Phe Gln Val Asn Arg Asp Ile Phe Leu Arg Thr Leu Cys Leu Val
 245 250 255
 Ala Val Thr Met Phe Phe Thr Ser Ala Gly Ala Ala Gln Gly Glu Val
 260 265 270
 Val Leu Ala Val Asn Thr Leu Leu Met Gln Leu Phe Thr Leu Phe Ser
 275 280 285
 Tyr Ile Met Asp Gly Phe Ala Tyr Ala Gly Glu Ala Leu Ala Gly Arg
 290 295 300
 Tyr Ile Gly Ala Gly Asn Arg Met Glu Leu His Arg Thr Val Arg Gln
 305 310 315 320
 Leu Phe Gly Trp Gly Val Gly Leu Ser Ala Gly Phe Thr Leu Leu Tyr
 325 330 335
 Gly Ile Gly Gly Gln Ser Phe Leu Gly Leu Leu Thr Asn Glu Ser Ser
 340 345 350
 Val Ile Gln Glu Ala Asp Thr Tyr Phe Tyr Trp Val Leu Ala Ile Pro
 355 360 365
 Leu Ala Gly Phe Ser Ala Phe Leu Trp Asp Gly Ile Phe Ile Gly Ala
 370 375 380
 Thr Ala Thr Arg Gln Met Leu Phe Ser Met Phe Ile Ala Ser Ala Ser
 385 390 395 400
 Phe Phe Leu Thr Tyr Ile Phe Gln Glu Val Met Gly Asn His Ala
 405 410 415
 Leu Trp Met Ala Phe Ile Ile Tyr Leu Ser Leu Arg Gly Leu Val Gln
 420 425 430
 Ala Phe Leu Ala Lys Lys Ile Val His
 435 440

<210> 8392
 <211> 115
 <212> PRT
 <213> B.fragilis

<400> 8392
 Lys Tyr Leu Phe Met Gly Leu Glu Asp Asp Phe Leu Leu Asn Asp Ala
 1 5 10 15
 Asp Asp Glu Lys Thr Ile Glu Phe Ile Arg Asn Tyr Leu Pro Gln Glu
 20 25 30
 Leu Lys Glu Lys Phe Ser Glu Asp Glu Leu Tyr Tyr Phe Leu Asp Leu
 35 40 45
 Ile Asp Glu Tyr Tyr Ser Glu Ser Gly Ile Leu Asp Val Gln Pro Asp

50 55 60
 Ala Asp Gly Tyr Val Asp Ile Asp Leu Glu Gln Val Val Glu Phe Ile
 65 70 75 80
 Val Lys Glu Ala Lys Lys Asp Glu Val Gly Glu Tyr Asp Pro Glu Asp
 85 90 95
 Ile Leu Phe Val Val Gln Gly Glu Met Glu Tyr Gly Asn Phe Leu Gly
 100 105 110
 Gln Val Glu
 115

<210> 8393
 <211> 418
 <212> PRT
 <213> B.fragilis

<400> 8393

Leu Leu Leu Leu Asp Thr Ile Asp Ser Val Leu Ile Ile Ile Ser Leu
 1 5 10 15
 Asp Tyr Tyr Ile Ile His Asn Ile Glu Leu Thr Leu Asn Ile Asn Lys
 20 25 30
 Met Lys Lys Ile Asn Ala Ala Leu Val Ile Ser Leu Phe Val Met Thr
 35 40 45
 Gly Cys Gly Gly Asn Lys Gln Leu Thr Asp Asp Cys Ile Thr Val Asp
 50 55 60
 Val Ser Ala Asp Tyr Pro Lys Lys Glu Leu Ile Leu Gln Asp Phe Met
 65 70 75 80
 Asp Val Glu Tyr Val Pro Leu Glu Thr Thr Asp Asp Phe Ile Thr Gln
 85 90 95
 Gly Ile Val Lys Ala Thr Gly Lys Lys Ile Leu Leu Val Ala Asn Arg
 100 105 110
 Ile Met Asp Gly Asn Ile Phe Val Phe Asp Arg Ala Thr Gly Lys Gly
 115 120 125
 Leu Arg Lys Ile Asn Arg Leu Gly Gln Ser Gly Glu Glu Tyr Ser His
 130 135 140
 Ile Thr Ser Ile Val Leu Asp Glu Asp Asn Asn Glu Met Phe Val Val
 145 150 155 160
 Asp Tyr Pro Ala Arg Lys Ile Leu Val Tyr Asp Leu Tyr Gly Glu Phe
 165 170 175
 Asn Arg Ser Leu Pro Phe Pro Asp Thr Cys Tyr Tyr Glu Phe Leu Ser
 180 185 190
 Asp Tyr Asp Arg Asp His Leu Ile Gly Tyr Lys Ser Tyr Leu Pro Leu
 195 200 205
 Ile Glu Thr Asp Glu Ser Cys His Val Leu Ile Ser Lys Lys Asp Gly
 210 215 220
 Ser Val Thr Arg Lys Ile Gln Ile Pro Phe Lys Glu Leu Glu Thr Pro
 225 230 235 240
 Val Val Thr Lys Asp Glu Ala Ile Val Thr Pro Val Phe Phe Leu Ile
 245 250 255
 Thr Pro His Asp Ser Asn Cys Leu Leu Thr Lys Thr Ser Ser Asp Thr
 260 265 270
 Ile Tyr Asn Tyr Leu Pro Asp Gly Thr Leu Ser Pro Phe Ile Val Arg
 275 280 285
 Thr Pro Ser Ile His Ser Met Asp Pro Lys Val Phe Leu Phe Pro Thr
 290 295 300
 Ile Ile Thr Asp Arg Tyr Tyr Phe Met Gln Thr Leu Asp Lys Lys Phe
 305 310 315 320
 Asn Phe Glu Lys Gly Arg Gly Phe Pro Thr Asn Asp Leu Val Tyr Asp
 325 330 335
 Lys Gln Glu Lys Ala Ile Phe Gln Tyr Thr Val Tyr Asn Asp Asp Phe

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340 345 350
 Ser Asn Lys His Arg Val Ala Leu Gly Gln Gln Pro Glu Lys Ser Val
 355 360 365
 Asp Glu Glu Ile Val Thr Cys Arg Ala Leu Asn Ala Ser Asp Leu Val
 370 375 380
 Glu Ala Asn Glu Lys Gly Glu Leu Lys Gly Lys Leu Lys Glu Ile Ala
 385 390 395 400
 Ala Gly Leu Asn Glu Ser Asn Ser Val Ile Met Leu Ile Lys Arg
 405 410 415
 Lys Lys

<210> 8394
 <211> 103
 <212> PRT
 <213> B.fragilis

<400> 8394
 Ala Ala Asp Pro Arg Cys Pro Thr Ile Val Thr Ser Thr Ser Pro Asn
 1 5 10 15
 Asn Gly Thr Val Ile Leu Glu Ile Ile Glu Gly Thr Ala Ile Cys Arg
 20 25 30
 Ile Arg Leu Phe Pro Leu Leu Met Cys Ile Cys Leu Phe Ile Asp Met
 35 40 45
 Gln Ser Tyr Met Lys Asn Arg Glu Tyr Glu Asn Asp Val Asn Asn His
 50 55 60
 Val Ile Ile Leu Val Arg Asn Val Leu Asp Thr Gly Ile Asn Ile Ile
 65 70 75 80
 Phe Val Cys Ile Leu Lys Asp Ile Leu Gln Thr Ile Asn Lys His Arg
 85 90 95
 Ser Glu Val Ala Leu Ser Ile
 100

<210> 8395
 <211> 261
 <212> PRT
 <213> B.fragilis

<400> 8395
 Arg Asn Leu Pro Lys Asn Tyr Val Pro Asn Met Met Pro Tyr Pro Glu
 1 5 10 15
 Ser Phe Pro Val Pro Leu Ile His Ile Ala Lys Ala Asp Ser Thr Asn
 20 25 30
 Gly Tyr Leu Asn Ala Leu Cys Glu Lys Glu Lys Val Ser Glu Leu Thr
 35 40 45
 Thr Val Val Ala Asp Phe Gln Thr Ala Gly Arg Gly Gln Arg Gly Asn
 50 55 60
 Ser Trp Glu Ser Glu Asp Gly Lys Asn Leu Met Phe Ser Phe Val Leu
 65 70 75 80
 Tyr Pro Thr Phe Leu Glu Ala Arg Lys Gln Phe Leu Leu Ser Gln Ile
 85 90 95
 Ala Ser Leu Ala Val Lys Glu Thr Leu Asp Leu Tyr Ile Gly Asp Val
 100 105 110
 Ser Ile Lys Trp Pro Asn Asp Ile Tyr Trp Lys Asp Lys Lys Ile Cys
 115 120 125
 Gly Met Leu Ile Glu Asn Asp Leu Met Gly Ile His Ile Ser Gln Ser
 130 135 140
 Ile Ala Gly Val Gly Ile Asn Ile Asn Gln Lys Glu Phe His Ser Ser
 145 150 155 160

Ala Pro Asn Pro Ile Ser Ile Ile Gln Ile Thr His Arg Glu Ser Asp
 165 170 175
 Arg Met Glu Ile Leu Ala Gln Val Leu Gln Arg Ile Lys Glu Tyr Tyr
 180 185 190
 Lys Ile Leu Gln Glu Gly Asp Ile Glu Phe Ile Thr Asp Arg Tyr Gln
 195 200 205
 Ala Ala Leu Phe Arg Lys Glu Gly Ile His Phe Tyr Lys Asp Ser Glu
 210 215 220
 Gly Thr Phe Asn Ala Gly Ile Val Gly Val Glu Ala Asp Gly His Leu
 225 230 235 240
 Val Leu Gln Asp Glu Thr Gly Lys Ile Arg Arg Tyr Leu Phe Lys Glu
 245 250 255
 Val Gln Tyr Ile Leu
 260

<210> 8396
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 8396
 Lys Met Ala Leu Glu Ile Thr Asp Asn Asn Phe Lys Glu Ile Leu Ala
 1 5 10 15
 Glu Gly Ser Pro Val Val Ile Asp Phe Trp Ala Pro Trp Cys Gly Pro
 20 25 30
 Cys Lys Met Val Gly Pro Ile Ile Asp Glu Leu Ala Lys Glu Tyr Glu
 35 40 45
 Gly Lys Val Ile Met Gly Lys Cys Asp Val Asp Glu Asn Ser Asp Leu
 50 55 60
 Pro Ala Glu Phe Gly Ile Arg Asn Ile Pro Thr Val Leu Phe Phe Lys
 65 70 75 80
 Asn Gly Glu Leu Val Asp Lys Gln Val Gly Ala Val Gly Lys Pro Ala
 85 90 95
 Phe Val Glu Lys Val Glu Lys Leu Leu
 100 105

<210> 8397
 <211> 443
 <212> PRT
 <213> B.fragilis

<400> 8397
 Ser Gly Ser Thr Gln Ile Ile Met Phe Leu Thr Lys Arg Phe Tyr Ile
 1 5 10 15
 Leu Val Leu Val Val Ile Leu Leu Leu Gly Gly Gly Tyr Leu Phe Gly
 20 25 30
 Ser Leu Phe Ile Ile Gly Gln Leu Gly Leu Leu Ala Leu Leu Ala
 35 40 45
 Leu Ala Phe Asp Gly Tyr Leu Leu Tyr Arg Thr Lys Gly Ile Gln Ala
 50 55 60
 Phe Arg Gln Cys Ala Gly Arg Phe Ser Asn Gly Asp Asp Asn Glu Val
 65 70 75 80
 Ser Leu Arg Ile Glu Ser Arg Tyr Ser Tyr Pro Val Arg Leu Ile Val
 85 90 95
 Ile Asp Glu Val Pro Val Ile Phe Gln Gln Arg Asn Val His Phe Glu
 100 105 110
 Leu Ser Leu Leu Pro Asn Glu Gly Lys Thr Leu Thr Tyr Arg Leu Arg
 115 120 125
 Pro Thr Arg Arg Gly Glu Tyr Gly Phe Gly Phe Ile Arg Val Phe Thr

130 135 140
 Thr Thr Arg Ile Gly Leu Ile Ser Arg Arg Ala Thr Cys Gly Arg Pro
 145 150 155 160
 Glu Thr Val Lys Val Tyr Pro Ser Tyr Leu Met Leu His Arg Tyr Glu
 165 170 175
 Leu Leu Ala Met Ser Asp Asn Leu Thr Glu Leu Gly Ile Lys Arg Ile
 180 185 190
 Arg Arg Ala Gly His Gln Thr Glu Phe Glu Gln Ile Lys Glu Tyr Val
 195 200 205
 Lys Gly Asp Asp Tyr Arg Thr Ile Asn Trp Lys Ala Ser Ala Arg Arg
 210 215 220
 His Gln Leu Met Val Asn Val Tyr Gln Asp Glu Arg Ser Gln Gln Ile
 225 230 235 240
 Tyr Ser Val Ile Asp Lys Gly Arg Val Met Gln Gln Ala Phe Arg Gly
 245 250 255
 Met Thr Leu Leu Asp Tyr Ala Ile Asn Ala Ser Leu Val Leu Ser Tyr
 260 265 270
 Val Ala Met Arg Lys Asp Asp Lys Ala Gly Leu Val Thr Phe Asn Glu
 275 280 285
 Tyr Phe Asp Thr Phe Val Pro Ala Ser Lys Gln Val Gly Gln Met Gln
 290 295 300
 Thr Leu Leu Glu Asn Leu Tyr Lys Gln Glu Thr Thr Phe Gly Glu Thr
 305 310 315 320
 Asp Phe Ser Ala Leu Cys Gly His Leu Gly Lys His Val Asn Lys Arg
 325 330 335
 Ser Phe Leu Val Leu Tyr Thr Asn Phe Ser Asn Met Thr Ser Leu Asn
 340 345 350
 Arg Gln Leu Val Tyr Leu Gln Gln Leu Ala Arg Gln His Arg Val Leu
 355 360 365
 Val Val Phe Phe Glu Asp Ala Asp Leu Lys Glu Tyr Ile Ala Gly Lys
 370 375 380
 Ser Val Thr Thr Glu Glu Tyr Tyr Arg His Val Ile Ala Glu Lys Phe
 385 390 395 400
 Ala Phe Glu Lys Arg Leu Ile Val Ser Thr Leu Lys Gln His Gly Ile
 405 410 415
 Tyr Ser Leu Leu Thr Thr Pro Asp Lys Leu Ser Ile Asp Val Ile Asn
 420 425 430
 Lys Tyr Leu Glu Met Lys Ser Arg Gln Leu Leu
 435 440

<210> 8398

<211> 288

<212> PRT

<213> B.fragilis

<400> 8398

Ser Ile Asn Thr His Asn Met Glu Trp Pro Lys Ser Lys Asn Asn Lys
 1 5 10 15
 Met Glu Glu Leu Leu Glu Arg Met Ser Gln Phe Glu Ala Asn Leu Ala
 20 25 30
 Gln Leu Ile Ser Thr Gly Ile Pro Asn His Thr Pro Ser Pro Ala Thr
 35 40 45
 Asp Glu Ala Thr Ser Ser Pro Asn Glu Gln Glu Gln Leu Ser Pro Glu
 50 55 60
 Gln Glu Glu Glu Met Lys Leu Lys Ile Gln Glu Leu Gln Gln Lys Glu
 65 70 75 80
 Glu Glu Leu Asn Leu Arg Ala Glu Lys Leu Asp Lys Leu Ala Lys Glu
 85 90 95
 Leu Glu Glu Arg Gln Gln Asn Leu Glu Asn Arg Asn Pro Asn Asp Glu

100	105	110
Arg Ser Ile Glu Pro Ala Thr His	Pro Asp His Ser Phe	Pro Ser Gln
115	120	125
Ile Gly Asp Gln Ile Asn Ala Leu	Lys Lys Leu Leu Glu Asp	Ser Ser
130	135	140
Tyr Lys Asp Lys Ile Ile Lys Asp	Leu His Glu Glu Leu Gln	Ser His
145	150	155
Asn Arg Asp Leu His Ala Glu Ile	Val Lys Pro Leu Leu Lys	Asn Met
165	170	175
Ile Lys Met His Glu Arg Leu Thr	Lys Thr Tyr Lys Phe Tyr	Glu Asn
180	185	190
Thr Glu Ala Lys Ser Ser Pro Glu	Thr Tyr Thr Arg Leu Leu Arg	Glu
195	200	205
Val Glu Asn Cys Lys Leu His Ile	Gln Asp Ile Leu Glu Asp	Glu Tyr
210	215	220
Asp Leu Glu Tyr Phe Glu Pro Thr	Ile Gly Ser Ala Tyr Ser	Pro Lys
225	230	235
Glu Gln Thr Ala Ile Arg Thr Val	Ile Thr Asp Thr Pro Glu	Gln Ala
245	250	255
Gly Thr Ile Lys Glu Phe His Tyr	Gly Gly Phe Arg Asn Thr	Thr Thr
260	265	270
Asn Lys Ile Phe Gln Pro Ser Thr	Val Thr Val Tyr Lys Lys	Ser Glu
275	280	285

<210> 8399
 <211> 240
 <212> PRT
 <213> B.fragilis

<400> 8399

Tyr Gln Leu Thr Thr Asp Arg Leu Met	Asn Ile Ser Glu Leu Ser Ile
1	5 10 15
Arg Arg Pro Val Leu Ser Thr Val Leu	Thr Ile Ile Ile Leu Leu Phe
20	25 30
Gly Leu Ile Gly Tyr Asn Tyr Leu Gly	Val Arg Glu Tyr Pro Ser Val
35	40 45
Asp Asn Pro Ile Ile Ser Val Ser Cys	Ser Tyr Pro Gly Ala Asn Ala
50	55 60
Asp Val Ile Glu Asn Gln Ile Thr Glu	Pro Leu Glu Gln Asn Ile Asn
65	70 75 80
Gly Ile Pro Gly Ile Arg Ser Leu Ser	Ser Val Ser Gln Gln Gly Gln
85	90 95
Ser Arg Ile Thr Val Glu Phe Glu Leu	Ser Val Asp Leu Glu Thr Ala
100	105 110
Ala Asn Asp Val Arg Asp Lys Val Ser	Arg Ala Gln Arg Tyr Leu Pro
115	120 125
Arg Asp Cys Asp Pro Pro Thr Val Ser	Lys Ala Asp Ala Asp Ala Thr
130	135 140
Pro Ile Leu Met Val Ala Leu Gln Ser	Asp Lys Arg Ser Leu Leu Glu
145	150 155 160
Leu Ser Glu Ile Ala Asp Leu Thr Val	Lys Glu Gln Leu Gln Thr Ile
165	170 175
Ser Asp Val Ser Ser Val Ser Ile Trp	Gly Glu Lys Arg Tyr Ser Met
180	185 190
Arg Leu Trp Leu Asp Pro Ile Lys Met	Ser Gly Tyr Gly Ile Thr Pro
195	200 205
Ile Asp Val Lys Asn Ala Val Asp Lys	Glu Asn Val Glu Leu Pro Ser
210	215 220
Gly Ser Ile Glu Gly Asn Pro Pro Glu	Leu Ser Ile Arg Thr Trp Asp

225

230

235

240

<210> 8400

<211> 662

<212> PRT

<213> B.fragilis

<400> 8400

Pro Thr Glu Thr Asp Met Lys Lys Ser Arg Cys Ile Lys Ser Tyr Ile
 1 5 10 15
 Trp Val Ala Phe Leu Leu Asn Thr Leu Ile Leu Phe Gly Cys Ile Gln
 20 25 30
 Pro Asn Asn Ser Arg Tyr Pro Asp Lys Ile His Glu Val Leu Lys Leu
 35 40 45
 Ser His Asn Asn Arg Lys Glu Ile Glu Lys Ala Leu Asp Phe Phe Ile
 50 55 60
 Asn Gln Lys Asp Ser Leu Lys Ile Arg Ser Ile Phe Phe Leu Val Gly
 65 70 75 80
 Asn Met Ala Asp Lys Tyr Ser Leu Thr Pro Ala Asn Glu Gln Asp Pro
 85 90 95
 Phe His Ser Ile Ile Leu Asn Asn His Ile Lys Glu Lys Glu Ala Trp
 100 105 110
 Asp Pro Gly Lys Ser Arg Leu Gly Met Ala Leu Asp Ser Val Tyr Lys
 115 120 125
 Thr Cys Thr Asp Pro Pro Arg Pro Lys Ile Val Arg Asp Ile Glu Val
 130 135 140
 Ile Thr Gly Asn Phe Leu Ile Asn Asn Val Glu Glu Ala Ile Lys Ile
 145 150 155 160
 Trp His Arg Thr Lys Lys Phe Thr Glu Cys Ser Phe Asp Asp Phe Cys
 165 170 175
 Glu Tyr Ile Leu Pro Tyr Arg Ile Gly Asn Glu Ser Leu Ser Ala Trp
 180 185 190
 Arg Glu Gln Ala Cys Gln Lys Phe Ser Tyr Leu Leu Asp Ser Ile Ser
 195 200 205
 Asp Pro Leu Glu Leu Thr Lys Ala Ile Val Gln Val Ser Gly Ile Tyr
 210 215 220
 Tyr Asn Ala Gly Met Ser Lys Tyr Pro Phe Phe Pro Thr Phe Ser Glu
 225 230 235 240
 Leu Asp Gln Leu His Trp Gly Ser Cys Asp His Leu Ala Ala Tyr Leu
 245 250 255
 Thr Phe Ser Leu Arg Ala Ile Gly Ile Pro Ser Thr Ile Asp Val Val
 260 265 270
 Pro Ala Trp Ala Asn Arg Gly Gly Gly His Ala Trp Asn Val Val Met
 275 280 285
 Asn Lys Asp Gly Lys Phe Val Asp Val Gly Phe Asn Gly Glu Gly His
 290 295 300
 Asn Ser Ile Ser Tyr Lys Ile Pro Lys Ile Tyr Arg Thr Gly Tyr Ser
 305 310 315 320
 Ser Asn Lys Gly Gly Ile Gly Tyr Leu Asp Pro Leu Trp Lys Asp Val
 325 330 335
 Thr Gly Glu Tyr Pro Met Pro Ile Ser Asp Ile Ala Leu Ser Gly Ser
 340 345 350
 Asp Ser Asp Met Lys Gly Asp Val Leu Leu Leu Cys Ile Phe Asn Asn
 355 360 365
 Lys Asp Trp Ile Pro Val Ala Val Ser Ala Thr Glu Asn Lys Lys Thr
 370 375 380
 Met Thr Phe Gly Asn Val Ala Arg Gly Ile Pro Phe Gly Asp Asn Lys
 385 390 395 400
 Ile Ala Gly Tyr Gln Asn Glu Gly Lys Gly Ile Val Tyr Leu Pro Ala

405 410 415
 Ser Val Arg Asn Gly Val Met Val Pro Phe Ala Thr Pro Phe Ile Leu
 420 425 430
 Lys Glu Asn Gly Asp Val His Lys Leu Thr Pro Asp His Ser Ala Leu
 435 440 445
 Arg Ser Ile Ser Leu Tyr Arg Lys Tyr Pro Lys Tyr Gly His Ile Ser
 450 455 460
 Val Tyr Ala Ala Arg Met Ala Asp Gly Cys Phe Glu Ile Ser Asn Gln
 465 470 475 480
 Thr Asp Phe Pro Thr Lys Arg Ile Tyr Thr Ile Lys Glu Pro Pro
 485 490 495
 Lys His Ala Met Ala Glu Val Asn Leu His Ala Pro Ala Thr Cys Arg
 500 505 510
 Tyr Ile Arg Tyr Lys Ala Pro Asp Gln Ser Trp Val Asn Ile Ser Glu
 515 520 525
 Leu Gln Cys Tyr Ser Pro Glu Gly Lys Leu Ser Gly Thr Pro Phe Ala
 530 535 540
 Ser Asp Lys Asn Lys Ser Pro Glu Glu Leu Ala Lys Ile Cys Asp Gly
 545 550 555 560
 Asn Ile Asp Thr Phe Tyr Ala Gly Glu Val Arg Asn Ala Tyr Val Gly
 565 570 575
 Ile Asp Phe Gly Lys Glu Val Glu Ile Asp Arg Ile Ile Tyr Ser Pro
 580 585 590
 Arg Thr Asp Gly Asn Asp Val Ile Pro Gly Glu Glu Tyr Glu Leu Phe
 595 600 605
 Tyr Trp Glu Asn Arg Trp Val Ser Leu Gly Arg Lys Lys Ala Asp Ser
 610 615 620
 Phe Arg Leu Gln Tyr Asp Ser Val Pro Asp Asn Ser Leu Leu Trp Leu
 625 630 635 640
 His Asn Arg Thr Lys Gly Val Glu Glu Arg Ile Phe Thr Tyr Met Asn
 645 650 655
 Asn Glu Gln Ile Trp Trp
 660

<210> 8401
 <211> 931
 <212> PRT
 <213> B.fragilis

<400> 8401

Met Asp Lys Thr Leu Leu Lys Leu Glu Ile Gly Lys Trp Asn Glu Ala
 1 5 10 15
 Cys Arg Phe Leu Lys Ser Lys Gln Thr Glu Leu Ser Thr Ala Glu Trp
 20 25 30
 Thr Ala Ile Glu Thr Leu Ala Asp Tyr Trp Arg Lys Lys Phe Asp Pro
 35 40 45
 Asp Ala Thr Ser Glu Cys Met Asp Leu Ile Ser Thr Leu Glu Gln Ser
 50 55 60
 Asp Lys Leu His Ser Asn Asn Lys Glu Ile Ile Val Trp Ser Lys Glu
 65 70 75 80
 Phe Arg Thr Ile Ala Arg Lys Tyr Tyr Thr Lys Asp Glu Thr Thr Phe
 85 90 95
 Leu Val Phe Gln Asn Ala Leu Lys Glu Leu Tyr Gln Ser Ser Ala Pro
 100 105 110
 Arg Ser Ser Ala Pro Leu Gln Thr Pro Val Asn Ser Glu Ser Gln Asn
 115 120 125
 Ile Ile Leu Lys Gln Asn Ala Lys Lys Trp Val Ser Thr Tyr Ser Gln
 130 135 140
 Leu Tyr Glu Asn Gln Asn Glu Leu Asp Arg Asp Glu Trp Asn Ala Val

CCDS: B00001

145	Arg	Phe	Leu	Ala	Asn	Phe	Trp	Lys	Asn	Gly	Thr	Phe	Asn	Glu	Thr	Ser
					165					170						175
Arg	Lys	Glu	Cys	Glu	Gln	Tyr	Ile	Ser	Ile	Leu	Ile	Ala	Ser	Asp	Lys	
			180					185						190		
Leu	His	Ser	Asn	Asn	Lys	Asn	Ile	Ile	Thr	Trp	Ser	Lys	Asp	Phe	Arg	
		195				200						205				
Gly	Ile	Ala	Lys	Thr	Tyr	Tyr	Thr	Lys	Asp	Ser	Lys	Thr	Phe	Glu	Gly	
	210					215						220				
Phe	Lys	Lys	Phe	Met	Thr	Lys	Tyr	Thr	Arg	Glu	Asn	Pro	Ile	Gln	Glu	
225					230					235					240	
Arg	Thr	Pro	Gln	Glu	Arg	Ile	Pro	Gln	Thr	Pro	Pro	Arg	Gln	Thr	Ser	
				245					250						255	
Pro	Ser	Ile	Glu	Ile	Thr	Gly	Leu	Val	Ile	Ala	Asn	Thr	Asp	Glu	Lys	
			260					265					270			
Gly	Asp	Pro	Ile	Pro	Ser	Asn	Gln	Ala	Glu	Leu	Asp	Thr	Arg	Ser	Cys	
		275				280						285				
Tyr	Leu	Gln	Pro	Arg	Ile	Asp	Tyr	Arg	Val	Leu	Arg	Gly	Gly	Ser	Ser	
	290					295					300					
Val	Asp	Ile	Trp	Tyr	Lys	Leu	Tyr	Ala	Pro	Asp	Arg	Thr	Leu	Met	Thr	
305					310					315					320	
Ala	Ser	Asn	Ser	Lys	Ser	Gly	Tyr	Thr	Trp	Tyr	Gly	Asn	Val	Pro	Leu	
				325					330						335	
Thr	Gly	Ser	Arg	Ser	Ala	Tyr	Pro	Leu	Asn	Gly	Phe	Gly	Ser	Met	Ser	
			340					345						350		
Gly	Asn	Val	Phe	Ser	Ala	Gly	Gln	Trp	Ile	Ile	Glu	Phe	Phe	Glu	Asn	
		355					360					365				
Asp	Leu	Gln	Ile	Ala	Thr	Tyr	Thr	Phe	Thr	Ile	Lys	Gln	His	Arg	Thr	
370						375					380					
Ser	Thr	Pro	Pro	Pro	Gln	Ser	Arg	Val	Thr	Pro	Pro	Pro	Pro	Pro	Arg	
385					390					395					400	
Thr	Pro	Ser	Asn	Arg	Arg	Thr	Ser	Thr	Val	Ser	Pro	Lys	Lys	Gly	His	
				405					410						415	
Gly	Gly	Leu	Trp	Ser	Phe	Leu	Ile	Ile	Ala	Ala	Ile	Ile	Gly	Phe	Cys	
			420					425					430			
Gly	Tyr	Gln	Tyr	Trp	Tyr	Lys	Pro	Met	Thr	Ile	Asp	Arg	Asp	Ala	Glu	
		435				440					445					
Arg	Thr	Tyr	Val	Tyr	Val	Ser	Ser	Leu	Leu	Gln	Arg	Ser	Asp	Lys	Asn	
	450					455					460					
Ala	Asn	Val	Glu	Tyr	Asn	Arg	Ile	Gln	Ser	Leu	Pro	Tyr	Gly	Ser	Glu	
465					470					475					480	
Leu	Ile	Thr	Tyr	Gln	Lys	Glu	Gly	Asp	Gly	Trp	Ser	Tyr	Ile	Arg	Ala	
				485				490						495		
Asn	Glu	Lys	Lys	Gly	Tyr	Val	Ser	Thr	Asn	Tyr	Thr	Leu	Ser	Lys	Thr	
			500					505					510			
Asp	Phe	Glu	Leu	Leu	Asn	Asn	Leu	Trp	Gly	Ser	Lys	Glu	Ala	Met	Glu	
		515				520						525				
Gly	Ala	Pro	Thr	Ala	Lys	Cys	Arg	Leu	Ala	Leu	Val	Asp	Phe	Ile	Lys	
	530					535					540					
Lys	Asn	Asn	Tyr	Lys	Thr	Gly	Thr	Gly	Gln	Trp	Gln	Leu	Phe	Ala	Gln	
545					550					555					560	
Pro	Ile	Glu	Val	Lys	Pro	Asn	Ala	Val	Leu	Tyr	Pro	Arg	Leu	Ala	Asn	
				565				570							575	
Gly	Tyr	Thr	Lys	Phe	Thr	Glu	Phe	Ala	Phe	Val	Leu	Ser	Asn	Ser	Ser	
			580					585					590			
Thr	His	Glu	Gly	Val	Leu	Ala	Ile	Tyr	Ser	Phe	Ala	Asp	Asp	Glu	Thr	
		595					600					605				
Pro	Val	Phe	Ile	Tyr	Gln	Glu	Gln	Thr	Thr	Glu	Asn	Ala	Lys	Ile	Lys	
	610					615					620					

Asp Val Arg Tyr Tyr Pro Trp Lys Thr Asp Lys Tyr Lys Val Ile Tyr
 625 630 635 640
 Ala Thr Pro Asn Ala Met Val Ser Arg Ser Pro Gln Leu Pro Thr Asn
 645 650 655
 Gln Gln Pro Ser Lys Ala Lys Ser Glu Asn Gly Leu Lys Ile Thr Lys
 660 665 670
 Ala Leu Phe Gly Asn Thr Asp Lys Ser Tyr Asn Ile Leu Thr Gln Phe
 675 680 685
 Gly Thr Gln Leu Pro Thr Thr Gln Tyr Leu Ser Pro Arg Ile Phe
 690 695 700
 Tyr Glu Asn Pro Ala Gly Lys Ser Ser Val Val Ile Lys Tyr Lys Ile
 705 710 715 720
 Ile Thr Pro Gln Gly Asn Leu Met Thr Gly Thr Gly Ser Pro Ser Gly
 725 730 735
 Tyr Thr Asn Glu Gln Lys Val Thr Leu Asn Arg Ser Gly Tyr Ile Asn
 740 745 750
 Leu Ala Gly Trp Gly Asn Thr Thr Gly Asp Ala Tyr Thr Ser Gly Thr
 755 760 765
 Tyr Arg Ile Glu Phe Trp Ser Glu Gly Glu Leu Leu Tyr Ser Thr Gly
 770 775 780
 Val Gln Ile Gln Gly Asn Ser Glu Lys Ala Val Thr Val Ser Ser Asn
 785 790 795 800
 Pro Val Glu Cys Pro Ile Lys Ile Arg Thr Met Leu Phe Ala Asn Ser
 805 810 815
 Asn Asp Lys Gly Thr Ile Leu Glu Asp Tyr Gly Lys Pro Leu Tyr Gly
 820 825 830
 Asn Lys Leu Gln Tyr Leu Lys Pro Lys Ile Ile Tyr Ser Ser Leu Asn
 835 840 845
 Gly Ala Arg Asn Ile Thr Leu Tyr Ala Lys Ile Tyr Arg Pro Asn Gly
 850 855 860
 Val Leu Ile Ala Asn Lys Asn Ser Pro Asn Gly Tyr Thr Tyr Lys His
 865 870 875 880
 Gly Met Tyr Thr Pro Ala Val Gly Ala Asp Asn Asn Val Ser Tyr Leu
 885 890 895
 Thr Ser Trp Gly Ser Pro Glu Cys Asp Val Tyr Ser Pro Gly Thr Tyr
 900 905 910
 Gln Tyr Glu Ile Trp Tyr Glu Gly Ser Lys Ile Phe Ser Cys Gln Val
 915 920 925
 Ile Val His
 930

<210> 8402
 <211> 441
 <212> PRT
 <213> B.fragilis

<400> 8402
 Gly Thr Ala Ala Val Cys His Cys Leu Arg Cys Asn Ser His Ser Val
 1 5 10 15
 Cys Leu Gly Tyr Tyr Glu Thr Leu Tyr Ser Ala Ile Met Glu Val Leu
 20 25 30
 Tyr Glu Ile Tyr Leu Ser Ile Arg Gln Asn Lys Ile Arg Thr Phe Leu
 35 40 45
 Ser Gly Phe Gly Ile Ser Trp Gly Ile Leu Ile Leu Val Val Leu Leu
 50 55 60
 Gly Thr Gly Lys Gly Phe Gln Asn Ser Val Met Asp Ile Phe Ser Ile
 65 70 75 80
 Phe Ala Gln Lys Ser Met Tyr Val Tyr Gly Gly Ala Thr Ser Met Lys
 85 90 95

Tyr Lys Asn Ile Arg Glu Gly Glu Gln Leu His Phe Asp Leu His Phe
 100 105 110
 Leu Asn Arg Ile Lys Lys Gln Phe Pro Gly Ile Lys Ala Ile Ser Pro
 115 120 125
 Glu Ile Thr Gly Pro Tyr Ser Gln Val Met Asn Lys Ala Lys Ser Gly
 130 135 140
 Leu Phe Lys Ile Ile Gly Ile Asn Glu Asn Tyr Met Gly Ile Lys Ile
 145 150 155 160
 Leu Lys Ile Asn Glu Asp Gly Arg Tyr Phe Asn Lys Gly Asp Asp Glu
 165 170 175
 Asn Thr Arg Asn Val Thr Ile Ile Gly Glu Asn Val Ser Thr Thr Leu
 180 185 190
 Phe Asn Asn Gln Lys Ala Leu Gly Lys Ser Ile Asn Ile Ala Gly Ile
 195 200 205
 Asp Phe Lys Val Ile Gly Val Leu Lys Asn Asp Asp Ile Phe Ser Ala
 210 215 220
 Ser Glu Ile Asn Ser Val Tyr Val Pro Phe Ser Ser Tyr Ile Asn Cys
 225 230 235 240
 Ile Asp Asn Lys Thr Pro Leu Arg Ala Phe Cys Leu Tyr Leu Asn Lys
 245 250 255
 Glu Val Asp Ser Lys Arg Phe Glu Asn Glu Leu Arg Ala Phe Ile Ala
 260 265 270
 Asn Lys Tyr Gln Phe Ala Tyr Pro Asp Lys Gln Ala Leu Gln Ile Ile
 275 280 285
 Asn Phe Glu Thr Gln Thr Ser Ala Phe Glu Gly Leu Phe Asp Gly Leu
 290 295 300
 Lys Met Phe Ile Trp Ile Val Gly Ile Cys Phe Leu Ile Ser Gly Ile
 305 310 315 320
 Val Gly Val Ser Asn Ile Met Phe Val Val Ile Lys Glu Arg Ser Ser
 325 330 335
 Glu Ile Gly Ile Arg Lys Ala Val Gly Ala Thr Pro Lys Ser Ile Leu
 340 345 350
 Val Leu Met Leu Thr Glu Ser Val Ile Ile Thr Val Ile Ser Gly Ile
 355 360 365
 Ile Gly Leu Ile Ser Gly Ala Gly Ile Leu Glu Ile Ile Asn Trp Leu
 370 375 380
 Leu Glu Ser Ala Arg His Ala Thr Met Ile Lys His Val Glu Ile Asp
 385 390 395 400
 Ile Asn Val Ala Val Leu Ala Leu Val Ile Leu Ile Leu Ser Gly Val
 405 410 415
 Ile Ala Gly Ala Phe Pro Ala Met Lys Ala Ser Val Ile Gln Pro Ile
 420 425 430
 Asp Ala Ile Arg Asn Glu Asn Ile Gly
 435 440

<210> 8403

<211> 245

<212> PRT

<213> B.fragilis

<400> 8403

Ser Glu Met Ala Glu Ser Thr Ile Ile Thr Gly Gln Phe Val Arg Ile
 1 5 10 15
 Ser Gln Val Pro Ala Ser Leu Gly Glu Arg Ile Leu Ala Arg Ile Ile
 20 25 30
 Asp Tyr Phe Leu Leu Phe Ile Tyr Ile Leu Ala Thr Ser Tyr Ile Leu
 35 40 45
 Gly Lys Leu Asn Ile His Ala Phe Ser Gly Ser Thr Phe Phe Leu Leu
 50 55 60

Phe Leu Phe Ile Tyr Leu Pro Val Leu Cys Tyr Ser Leu Leu Cys Glu
 65 70 75 80
 Val Phe Asn Gln Gly Gln Ser Ala Gly Lys Lys Leu Met Asn Ile Arg
 85 90 95
 Val Val Lys Ala Asp Gly Thr Thr Pro Ser Leu Ser Ala Tyr Leu Leu
 100 105 110
 Arg Trp Leu Leu Tyr Gly Ile Asp Val Thr Ile Thr Gly Gly Leu Gly
 115 120 125
 Val Leu Val Ile Leu Leu Thr Lys Asn Ser Gln Arg Leu Gly Asp Leu
 130 135 140
 Ala Ala Gly Thr Met Val Ile Lys Glu Lys Asn Tyr Arg Lys Ile Gln
 145 150 155 160
 Val Ser Leu Asp Glu Phe Asp Tyr Leu Thr Lys Gly Tyr His Pro Ser
 165 170 175
 Phe Pro Ser Ala Ala Asp Leu Ser Leu Glu Gln Ile Asn Val Ile Ser
 180 185 190
 Lys Ala Leu Glu Leu His His Lys Asp Arg Thr Arg His Ile Ala Gln
 195 200 205
 Leu Ala Pro Lys Val Arg Ala Leu Leu Ser Val Asp Gln Thr Asn Ile
 210 215 220
 Asn Asp Glu Lys Phe Leu Gln Thr Val Val Arg Asp Tyr Gln Tyr Tyr
 225 230 235 240
 Ala Leu Glu Glu Ile
 245

<210> 8404
 <211> 602
 <212> PRT
 <213> B.fragilis

<400> 8404

Asn Lys Pro Ala Met Lys Asn Lys Val Leu Lys Ile Thr Ala Ala Leu
 1 5 10 15
 Leu Phe Leu Leu Pro His Ala Gly Leu Asp Asn Asn Arg Phe Pro Val
 20 25 30
 Met Leu Phe Leu Phe Tyr Ile Cys Ser Phe Val Phe Phe Ala Thr Thr
 35 40 45
 Trp Ser Gly Met Lys Glu Asp Trp Ser Arg Asn Ser Arg Thr Cys Phe
 50 55 60
 Ile Val Ser Gly Ile Val Leu Ser Leu Phe Leu Arg Tyr Val Ser Gly
 65 70 75 80
 Asn Ile Tyr Gly Thr Tyr Arg Leu Tyr Thr Met Ala Val Leu Trp Ile
 85 90 95
 Leu Phe Phe Ser Phe Tyr Ala Ala Gln Ser Leu Pro Gly Lys Asn Arg
 100 105 110
 Arg Phe Leu Ala Trp Val Val Ile Ala Thr Val Ala Val Glu Thr Val
 115 120 125
 Leu Gly Ile Ala Gln Ser Ile Gly Leu Leu Glu Asn Ser Asp Pro Gln
 130 135 140
 Phe Ile Ile Gly Gly Ser Met Thr Asn Pro Gly Ala Tyr Ala Gly Tyr
 145 150 155 160
 Leu Gly Val Thr Thr Pro Leu Ile Leu Ser Leu Leu Val Ser Tyr Lys
 165 170 175
 Lys Asn Lys Arg Phe Glu Asn Ile Cys Tyr Ile Leu Gly Gly Leu Phe
 180 185 190
 Ile Leu Val Cys Tyr Leu Leu Ile Leu Ser Arg Ser Arg Gly Ala Trp
 195 200 205
 Ile Ala Cys Gly Ala Gly Cys Leu Cys Val Leu Cys Tyr Arg Tyr Ala
 210 215 220

Arg Phe Leu Arg Gly Thr Asn Tyr Trp Ser Lys Lys Ala Ile Arg Thr
 225 230 235 240
 Pro Thr Ile Ile Leu Ser Ala Val Leu Ile Ile Ala Ser Gly Phe Phe
 245 250 255
 Val Phe Lys Met Lys Glu Asp Ser Ala Leu Gly Arg Ile Leu Val Trp
 260 265 270
 Lys Val Thr Leu Ser Thr Pro His Pro His Ala Ser Leu Leu Trp Gly
 275 280 285
 Asn Gly Ile Gly Tyr Phe Glu Ser Gln Tyr Gly Lys Trp Gln Ala Asp
 290 295 300
 Tyr Phe Arg Glu Lys Glu Gly Thr Glu Lys Glu Arg His Ile Ala Gly
 305 310 315 320
 Tyr Val Thr Thr Ala Tyr Asn Glu Phe Leu Glu Leu Gly Leu Glu Gln
 325 330 335
 Gly Ile Ile Val Thr Ala Cys Ile Ala Ala Leu Leu Val Met Ala Thr
 340 345 350
 Gly Thr Gly Trp Lys Asn Leu Ser Thr Ile Glu Leu Gly Ala Lys Ala
 355 360 365
 Ser Ile Val Ser Ile Thr Ile Leu Met Phe Cys Ser Tyr Pro Leu Lys
 370 375 380
 Val Leu Pro Thr Thr Leu Tyr Leu Met Phe Cys Leu Ser Val Ala Leu
 385 390 395 400
 Tyr Gly Lys Lys Arg Leu Leu Ser Thr Gly His Arg Met Ile Ser Asn
 405 410 415
 Gly Val Arg Ser Leu Ala Gly Pro Leu Ile Cys Val Phe Ala Leu Ala
 420 425 430
 Gly Met Ile Asn Ala Tyr Gly Tyr Phe Cys His Arg Gly Gln Gln
 435 440 445
 Arg Val Met Arg His Asp Leu Lys Gly Gly Ile Glu Met Tyr Lys Lys
 450 455 460
 Ala Gln Gly Ile Leu Arg Lys Asp Gly Ile Phe His Phe Tyr Leu Gly
 465 470 475 480
 Ser Ala Tyr Phe Leu Ser Ala Glu Tyr Gln Lys Ala Ile Glu Glu Leu
 485 490 495
 Ser Val Ser Cys Thr Gln Cys Ser Asn Pro Ser Ser Phe Ile Leu Leu
 500 505 510
 Gly Asn Ala Tyr Arg Glu Asn Gly Asp Thr Ala Lys Ala Ile Asp Ala
 515 520 525
 Tyr Thr Thr Ala Val Tyr Ile Gln Pro Ser Lys Leu Tyr Pro Lys Tyr
 530 535 540
 Leu Leu Ala Lys Leu Tyr Glu Ala Ala Gly Asp Tyr Gly Ser Ala Gly
 545 550 555 560
 Glu Trp Ala Ser Lys Ile Leu Ala Thr Asp Glu Lys Val Pro Thr Thr
 565 570 575
 Ala Ala Lys Glu Ile Lys Glu Glu Met Arg Leu Leu Leu Lys Gln Val
 580 585 590
 Val Ile Lys Thr Lys Lys Asp Asp Tyr Lys
 595 600

<210> 8405

<211> 236

<212> PRT

<213> B.fragilis

<400> 8405

Ser Met Glu Ala Lys Val Lys Ile Leu Phe Ile Asp Asp Asp Ile Thr
 1 5 10 15
 Phe Gly Arg Ile Cys Thr Ile Ile Leu Gln Glu Lys Gly Tyr Glu Val
 20 25 30

Phe Tyr Gln Thr Thr Leu Asn Gly Ala Lys Ala Cys Ile Ala Glu Ala
 35 40 45
 His Pro Asp Ile Ile Val Leu Asp Val Glu Ile Gly Asn Gln Asn Gly
 50 55 60
 Ile Glu Val Ala Pro Glu Ile Thr Val Ile Ala Pro Asn Val Pro Val
 65 70 75 80
 Leu Phe Ile Ser Ser His Thr Glu Ser His Trp Val Val Gln Ala Leu
 85 90 95
 Glu Ala Gly Ala Val Ala Tyr Leu Lys Lys Pro Phe His Ala Glu Glu
 100 105 110
 Leu Ile Ala Tyr Val Glu Arg Phe Ala Val Gln Arg Pro Ser Gln Leu
 115 120 125
 Arg Ile Gly Ser Leu Ser Leu Asp Thr Glu Thr Arg Ile Leu Phe Ala
 130 135 140
 Asp Asp Ser Thr Val Ile Lys His Leu Ser Glu Ser Glu Tyr Lys Leu
 145 150 155 160
 Val Arg Leu Leu Leu Ile His Lys Asn His Ile Val Gly Arg Gly Gln
 165 170 175
 Ile Glu Met Glu Leu Trp Gly Asn Thr Glu Gly Asn Glu Gln Ser Thr
 180 185 190
 Asn Asn Leu Ile Phe Lys Ile Arg Lys Tyr Leu Val Ala Asp Pro Asp
 195 200 205
 Ile Ala Leu Glu Thr Ile Pro Arg Ser Gly Tyr Arg Leu Ser Val Lys
 210 215 220
 Leu Glu Lys Gln Lys Arg Arg Val Ser Asp Cys Phe
 225 230 235

<210> 8406

<211> 251

<212> PRT

<213> B.fragilis

<400> 8406

Asn Trp Val Tyr Leu Gln Thr Lys Leu Lys Lys Tyr Met Lys Lys Ile
 1 5 10 15
 Tyr Leu Phe Leu Ser Phe Leu Ile Val Ile Leu Ala Tyr Pro Leu Ile
 20 25 30
 Ser Leu Leu Thr Val Leu Ile Ile Gly Asn Leu Val Gln Asn Thr Thr
 35 40 45
 Pro Trp Ile Arg Pro Met Thr Leu Phe Ser Leu Ala Thr Phe Ile Leu
 50 55 60
 Ile Phe Arg Lys Asn Ile Arg Cys His Ser Ser Phe Asn Arg Ser Leu
 65 70 75 80
 Ser Leu Lys Thr Ile Leu Ser Val Cys Ile Leu Thr Ile Ser Met Cys
 85 90 95
 Ile Ala Ile Gly Met Ile Thr Pro Ile Pro Gln Asn Ile Ser Leu Ala
 100 105 110
 Lys Gln Glu Leu Leu Asn Phe Pro Arg Phe Ile Tyr Ser Leu Phe Leu
 115 120 125
 Ile Pro Ile Leu Glu Glu Leu Cys Phe Arg Ile Ile Ile Asn Lys
 130 135 140
 Phe Lys Gly Lys Met Asn Gln Trp Ile Ile Ile Thr Gly Thr Ala Leu
 145 150 155 160
 Leu Phe Gly Ile Ile His Thr Ser Ser Ile Tyr Thr Met Ile Ser Met
 165 170 175
 Ala Cys Phe Gly Phe Ile Leu Ala Tyr Leu Tyr Val Lys Ser Glu Asn
 180 185 190
 Gly Phe Leu Leu Ile Leu Val His Ser Leu Tyr Ser Ile Ser Val Tyr
 195 200 205

Cys Ser Tyr Ser Val Phe Trp Ser Ile Thr Ser Arg Val Leu Asn Tyr
 210 215 220
 Val Tyr Ser Pro Ile Tyr Tyr Ile Ile Val Ala Ile Ser Ile Met Tyr
 225 230 235 240
 Ile Ile Tyr Phe Phe Leu Lys Lys Lys Tyr Val
 245 250

<210> 8407

<211> 365

<212> PRT

<213> B.fragilis

<400> 8407

Lys Arg Lys Tyr Arg Ile Met Lys Thr Phe Lys Ile Ile Leu Ile Cys
 1 5 10 15
 Ile Phe Ser Ala Thr Leu Ala Phe Val Ala Phe Arg Ser Ser Leu Arg
 20 25 30
 Gly Thr Lys Ala Ile Tyr Glu Thr Thr Gln Pro Gln Tyr Arg Glu Ile
 35 40 45
 Lys Glu Glu Ile Asn Ile Ser Gly Asn Val Phe Pro Met Lys Glu Ile
 50 55 60
 Glu Ile Lys Ser Gln Ile Ser Gly Val Leu Asp Lys Ile Asn Val Ser
 65 70 75 80
 Ile Gly Asp Lys Val Arg Ile Gly Asp Pro Val Ala Ser Ile Met Leu
 85 90 95
 Val Pro Asn Ala Ser Asp Met Glu Arg Leu Glu Tyr Asn Leu Asn Thr
 100 105 110
 Ala Gln Ile Glu Tyr Lys Ala Arg Leu Glu Asp Tyr Lys Arg Glu His
 115 120 125
 Lys Leu Tyr Ser Lys Asn Leu Val Ala Gln Ala Glu Met Asp Ser Tyr
 130 135 140
 Thr Gln Ala Tyr Glu Leu Ser Lys Glu Lys Leu Ala Ser Ala Gln Asn
 145 150 155 160
 Gln Leu Asn Ile Leu Lys Glu Gly Arg Ile Ser Pro Glu Thr Ala Ser
 165 170 175
 Asn Ile Val Arg Ser Ser Ile Ser Gly Val Ile Ile Asp Thr Pro Leu
 180 185 190
 Glu Thr Gly Ala Ser Val Ile Glu Arg Asn Asn Phe Asn Pro Gly Thr
 195 200 205
 Thr Ile Ala Val Val Ala Glu Met Ser Arg Phe Arg Phe Lys Ala Leu
 210 215 220
 Val Pro Glu Lys Tyr Leu Lys Asp Ile Ala Leu Gln Asp Thr Ile Ser
 225 230 235 240
 Leu Leu Phe Asn Ala Tyr Asp Asn Leu Arg Thr Arg Ala Val Val Thr
 245 250 255
 Lys Ile Ser Ser Lys Gly Asn Ala Glu Asn Gly Ile Met Lys Tyr Met
 260 265 270
 Leu Glu Ala Glu Phe Pro Val Ser Glu Asn Met Pro Val Ile Arg Ser
 275 280 285
 Gly Tyr Ser Ala Thr Ala Asn Met Val Ile Lys Gln Lys Lys His Thr
 290 295 300
 Leu Ser Ile Asp Glu Lys Tyr Val Leu Tyr Glu Asn Asp Ser Thr Tyr
 305 310 315 320
 Leu Tyr Leu Leu Asp Thr Val Thr Gln Gln Lys Thr Lys Gln Ile Ile
 325 330 335
 Asn Ile Gly Ile Ser Asp Gly Asn Tyr Val Glu Val Ile Lys Gly Ile
 340 345 350
 Ser Leu Lys Asp Lys Ile Val Thr Asn Ser Thr Asp Lys
 355 360 365

<210> 8408
 <211> 353
 <212> PRT
 <213> B.fragilis

<400> 8408

Trp Pro Asp Leu Ser Lys Val Leu Ser Arg Val Ile Pro Asn Tyr Pro
 1 5 10 15
 Met Phe Cys Gly Trp Ala Ser Phe Tyr Cys His Cys His Leu Leu Ser
 20 25 30
 Ile Thr Ile Phe Ile Tyr Gln Thr Glu Lys Leu Met Glu Ser Gln Lys
 35 40 45
 Pro Lys Ile Ala Leu Tyr Val Lys Arg Pro Phe Gly Asp Lys Leu Asn
 50 55 60
 Ala Thr Met Asp Phe Ile Lys Glu Asn Trp Lys Pro Met Leu Lys Phe
 65 70 75 80
 Cys Thr Tyr Leu Ile Leu Pro Leu Cys Leu Ile Gln Ala Ile Ser Met
 85 90 95
 Asn Gly Ile Met Gly Gly Ala Met Gly Ile Ala Ala Ala Lys Glu Ala
 100 105 110
 Gly Thr Asn Ser Leu Ala Ala Ile Gly Met Gln Phe Trp Val Asn Tyr
 115 120 125
 Gly Leu Met Phe Leu Cys Tyr Leu Val Gly Ser Ile Leu Leu Thr Ser
 130 135 140
 Ile Ile Tyr Gly Leu Met Gln Val Tyr Asn Gln Arg Glu Glu Arg Leu
 145 150 155 160
 Ala Gly Val Thr Phe Ala Asp Leu Lys Pro Phe Leu Phe Lys Asn Ile
 165 170 175
 Arg Arg Leu Leu Val Met Val Leu Phe Cys Ile Gly Leu Thr Ile Val
 180 185 190
 Val Gly Ile Val Met Gly Ile Leu Val Val Ala Ser Pro Phe Thr Leu
 195 200 205
 Leu Leu Thr Ile Pro Leu Leu Ile Ala Cys Ala Val Pro Leu Ala Leu
 210 215 220
 Phe Thr Pro Ile Tyr Leu Phe Glu Glu Ile Gly Ile Leu Ala Ala Phe
 225 230 235 240
 Trp Lys Thr Phe Arg Leu Gly Phe Ala Thr Trp Gly Gly Val Phe Leu
 245 250 255
 Val Ser Leu Val Met Gly Leu Ile Ser Ser Val Leu Gln Gly Val Thr
 260 265 270
 Thr Thr Pro Trp Tyr Ile Ala Thr Ile Val Lys Tyr Phe Phe Met Leu
 275 280 285
 Ser Asp Thr Gln Asn Glu Leu Thr Ile Ser Ala Gly Tyr Ser Phe Met
 290 295 300
 Val Tyr Leu Leu Ala Ile Val Gln Thr Phe Gly Ala Tyr Leu Ser Met
 305 310 315 320
 Ile Phe Ser Leu Ile Gly Met Val Tyr Gln Tyr Gly His Ala Ser Glu
 325 330 335
 Val Val Asp Ser Ile Ser Val Glu Ser Glu Ile Asp Lys Phe Glu Gln
 340 345 350
 Leu

<210> 8409
 <211> 96
 <212> PRT
 <213> B.fragilis

<400> 8409

Pro Met Phe His Ile Leu Gly Phe Leu Phe Ile Ile Val Ile Ala Val
 1 5 10 15
 Ile Ile Ile Gly Leu Ala Leu Val Gly Ser Val Leu Arg Ala Val Phe
 20 25 30
 Gly Leu Gly Lys Arg Ser Pro Ser Ser Gly Ser Asp Arg Asn Gly Pro
 35 40 45
 Asn Asn Asn Ser Gly Ser Arg Arg Tyr Tyr His Gln Thr Gln Ala Asn
 50 55 60
 Asp Lys Glu Glu Ile Ile Thr Gly Thr Gly Ala Lys His Lys Lys Leu
 65 70 75 80
 Phe Asp Asp Asn Glu Gly Glu Tyr Val Asp Tyr Glu Glu Ile Lys Glu
 85 90 95

<210> 8410

<211> 242

<212> PRT

<213> B.fragilis

<400> 8410

Thr Asn Asn Gln Asn Arg Met Ala Lys Tyr Lys Arg Val Leu Leu Lys
 1 5 10 15
 Leu Ser Gly Glu Ser Leu Met Gly Glu Lys Gln Tyr Gly Ile Asp Glu
 20 25 30
 Lys Arg Leu Ala Glu Tyr Ala Ala Gln Ile Lys Glu Ile His Glu Gln
 35 40 45
 Gly Val Gln Ile Gly Ile Val Ile Gly Gly Gly Asn Ile Phe Arg Gly
 50 55 60
 Leu Ser Gly Ala Asn Lys Gly Phe Asp Arg Val Lys Gly Asp Gln Met
 65 70 75 80
 Gly Met Leu Ala Thr Val Ile Asn Ser Leu Ala Leu Ser Ser Ala Leu
 85 90 95
 Val Ala Ala Gly Val Lys Ala Arg Val Leu Thr Ala Val Arg Met Glu
 100 105 110
 Pro Ile Gly Glu Phe Tyr Ser Lys Trp Lys Ala Ile Glu Cys Met Glu
 115 120 125
 Asn Gly Glu Ile Val Ile Met Ser Ala Gly Thr Gly Asn Pro Phe Phe
 130 135 140
 Thr Thr Asp Thr Gly Ser Ser Leu Arg Gly Ile Glu Ile Glu Ala Asp
 145 150 155 160
 Val Met Leu Lys Gly Thr Arg Val Asp Gly Ile Tyr Thr Ala Asp Pro
 165 170 175
 Glu Lys Asp Pro Thr Ala Thr Lys Phe His Asp Ile Thr Tyr Asp Glu
 180 185 190
 Val Leu Lys Arg Gly Leu Lys Val Met Asp Leu Thr Ala Thr Cys Met
 195 200 205
 Cys Lys Glu Asn Asn Leu Pro Ile Val Val Phe Asp Met Asp Thr Val
 210 215 220
 Gly Asn Leu Lys Lys Val Ile Thr Gly Glu Glu Ile Gly Thr Leu Val
 225 230 235 240
 His Asn

<210> 8411

<211> 469

<212> PRT

<213> B.fragilis

<400> 8411

Thr Ala Gly Gln Pro Lys Val Val Leu Leu Ile Leu Ala Leu Ala Gly
 1 5 10 15
 Asn Gly Leu Gly Ser His His Ile Arg Pro Thr Ala Leu Thr Gly Lys
 20 25 30
 Val Ser Val Arg Met Ile Tyr Arg His His Arg Ala Lys Val Gly Thr
 35 40 45
 Val Glu Cys Thr Val Asp Leu Cys Cys Leu Val Thr Val Val Thr Ser
 50 55 60
 Val Arg Ser Ile Pro Val Ser Val Val Val Asp Gly Leu Gln Pro His
 65 70 75 80
 Leu Gln Pro Ile Gly Asp Val Arg Ser Gln Val Gln Val Asp Ile Glu
 85 90 95
 Thr Ala Val Leu Ile Val Val Met Phe Gln Cys Ser Pro Leu Val Glu
 100 105 110
 Glu Thr Tyr Arg Thr Val Ile Gly Gly Leu Ala Arg Thr Ser Val Glu
 115 120 125
 Arg Gln Gly Val Leu Leu His Gln Gly Val Val Phe Asp Gly Phe Ile
 130 135 140
 Tyr Pro Val Gly Val Ala Ala Ile Gln Ile Leu Val Gly Ile Gly Arg
 145 150 155 160
 Ile Asp Glu Tyr Arg Gln Ile Val Phe Arg Val Gly Ile Ile Gly Ile
 165 170 175
 Asp Met Ile His Ile Val Leu Ile Val Val Ile Ala Ser Thr Arg Val
 180 185 190
 Ala Val Gly Gln Ile Met Glu Ile Gly Lys Cys Pro Arg Ile His Ile
 195 200 205
 Leu Arg Phe Ala Cys Arg Arg Ile Asp Arg Pro Val Gly Arg Glu Arg
 210 215 220
 Asp Leu Gly Phe Leu Val Phe Thr Phe Leu Gly Gly Asn Gln His Asp
 225 230 235 240
 Thr Ile Gly Cys Leu Cys Ser Val Asn Arg Ser Arg Ser Arg Ile Leu
 245 250 255
 Gln Tyr Arg Tyr Ala Phe His Ile Gly Arg Ile Asp His Val Gly Ile
 260 265 270
 His Leu His Thr Ile Asp Gln Tyr Gln Arg Ser Gly Arg Val Tyr Arg
 275 280 285
 Cys Ser Thr Thr Asn Val Glu Pro Val Ser Phe Ala Arg Arg Thr Val
 290 295 300
 Val Gly Gly Asn Val Gln Val Thr Asp Arg Arg Leu Gln Ser Leu Ala
 305 310 315 320
 Lys Ile Gly Asp Arg Ala Thr Leu Gln Cys Leu Cys Arg Asn Thr Gly
 325 330 335
 Tyr Gly Ser Gly Glu Val Gly Phe Leu Leu Cys Thr Ile Thr His His
 340 345 350
 His Asp Phe Val Gln Gly Phe Ala Val Leu Phe Gln Gly Asp Leu Gln
 355 360 365
 Thr Gly Leu Cys Gly Asn Gly His Asp Leu Cys Phe His Ser Asn Lys
 370 375 380
 Gly Asp Leu Lys Leu Leu Ser Leu Phe Arg Phe Asn Arg Glu Val Thr
 385 390 395 400
 Ile His Ile Gly Asp Cys Ser Thr Ser Gly Ser Thr Leu Tyr Gln Tyr
 405 410 415
 Arg Ser Pro Gly Lys Arg Arg Thr Arg Asn Val Lys Asn Thr Thr Gly
 420 425 430
 Tyr Phe Leu Phe Leu Leu Phe Tyr Leu His His Ser Gly Arg Cys Cys
 435 440 445
 Ile Val Ala Val Arg Ser Lys Ala Arg Leu Lys Ser His Thr Arg Lys
 450 455 460
 Lys Asp Lys His Pro

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

465

<210> 8412
 <211> 207
 <212> PRT
 <213> B.fragilis

<400> 8412

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Phe	Trp	Gln	Ser	Asn	Pro	Asp	Tyr	Asp	Tyr	Asn	Arg	Glu	Leu	Met	Thr
			20					25					30		
Pro	Glu	Ile	Asp	Ile	Tyr	Gly	Trp	Leu	Ser	Met	Gln	Leu	Ser	Lys	Leu
		35					40					45			
Leu	Arg	Ala	Ile	Phe	Gly	Ser	Arg	Phe	Ala	Glu	Glu	Tyr	Ser	Gly	Ile
	50					55					60				
Ile	Leu	Ile	Ile	Ile	Ala	Ile	Leu	Ile	Leu	Leu	Leu	Ile	Leu	Trp	Phe
65					70					75					80
Leu	Tyr	Lys	Lys	Arg	Pro	Glu	Leu	Phe	Met	Arg	Ser	Arg	Arg	Gly	Pro
				85					90					95	
Val	Asn	Tyr	Ser	Val	His	Glu	Asp	Thr	Ile	Tyr	Gly	Val	Asp	Phe	Asp
			100					105					110		
Ala	Glu	Ile	Arg	Arg	Ala	Ile	Asp	Arg	Lys	Asp	Tyr	Arg	Glu	Ala	Ile
		115					120					125			
Arg	Leu	Leu	Tyr	Leu	Gln	Thr	Leu	Lys	Leu	Leu	Ser	Asp	Asp	Gly	Arg
	130					135						140			
Ile	Asp	Trp	Gln	Leu	Tyr	Lys	Thr	Pro	Thr	Glu	Tyr	Ile	Tyr	Glu	Val
145					150					155					160
Lys	Gln	Glu	Ile	Leu	Arg	Thr	Pro	Phe	Arg	Asn	Leu	Thr	His	Gly	Phe
				165					170					175	
Leu	Arg	Val	Arg	Tyr	Gly	Asn	Phe	Pro	Ala	Ser	Glu	Ser	Leu	Phe	Glu
			180					185					190		
Glu	Leu	Ala	Ala	Leu	Gln	Thr	Gln	Ile	Arg	Lys	Gly	Gly	Asp	Val	
		195					200					205			

<210> 8413
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 8413

Leu	Leu	Phe	Leu	Lys	Glu	Val	Asn	Val	Leu	Met	Ile	Lys	Pro	Glu	Tyr
1				5					10					15	
Leu	Ser	Glu	Lys	Ile	Arg	Lys	Phe	Ala	Tyr	Lys	Tyr	Pro	Ile	Tyr	Val
			20					25					30		
Phe	His	Ser	Ser	Ile	Arg	Thr	Ile	Ser	Lys	Lys	Asp	Arg	Val	Ile	Lys
		35					40					45			
Arg	Glu	Ile	Lys	Ile	Ser	Phe	Ser	Cys	Lys	Asn	Ala	Asn	Lys	Gln	Ile
	50					55					60				
Tyr	Leu	His	Asn	Tyr	Phe	Ser	Leu	Arg	Thr	Arg	Asp	Lys	Ile	Tyr	Pro
65					70					75					80
Tyr	Asn	Gln	Lys	Thr											
				85											

<210> 8414
 <211> 165
 <212> PRT
 <213> B.fragilis

<400> 8414

Leu Tyr Thr Lys His Asn Thr Met Lys Lys Lys Ile Ile Arg Tyr Leu
 1 5 10 15
 Ile Val Ser His Leu Thr Phe Ile Leu Ser Ile Gly Gly Met Ala Val
 20 25 30
 Ala Phe Tyr Tyr Tyr His Thr Ala Gln Met Ala Gln Ile Lys Asn Ala
 35 40 45
 Asn Ile Leu Leu Ile Ser Lys Asp Glu Met Lys Leu Arg Leu Ile Asp
 50 55 60
 Tyr Lys Gly Gln Glu Leu Phe Thr Ala Asp Ile Ala Cys Gly Lys Asn
 65 70 75 80
 Tyr Gly Asn Lys Glu Lys Gln Gly Asp Leu Lys Thr Pro Glu Gly Thr
 85 90 95
 Phe Lys Ile Ile Asp Ile Gln Asp Ala Ser Lys Trp Lys His Asp Phe
 100 105 110
 Gly Asp Gly Lys Gly Glu Ile Glu Gly Ala Tyr Gly Asn His Phe Ile
 115 120 125
 Arg Leu Glu Thr Pro Gly His Lys Gly Asn Trp Asp Ser Trp His Pro
 130 135 140
 Arg Pro Ile Ile Tyr Trp Asp Pro Glu Arg Pro Glu Asp Ala Phe Glu
 145 150 155 160
 Ser Lys Ile Gln Asn
 165

<210> 8415

<211> 190

<212> PRT

<213> B.fragilis

<400> 8415

Ile Leu Asn Lys Met Val Asp Val Lys Thr Ile Ile Glu Glu Ser Gln
 1 5 10 15
 Glu Lys Met Asp Met Ala Val Met Tyr Leu Glu Glu Ala Leu Ala His
 20 25 30
 Ile Arg Ala Gly Lys Ala Ser Thr Arg Leu Leu Asp Gly Ile Arg Val
 35 40 45
 Asp Ser Tyr Gly Ser Met Val Pro Ile Ser Asn Val Ala Ala Val Thr
 50 55 60
 Thr Pro Asp Ala Arg Ser Ile Thr Ile Lys Pro Trp Asp Lys Ser Met
 65 70 75 80
 Phe Arg Val Ile Glu Lys Ala Ile Ile Asp Ser Asp Leu Gly Ile Met
 85 90 95
 Pro Glu Asn Asn Gly Glu Ile Ile Arg Ile Gly Ile Pro Pro Leu Thr
 100 105 110
 Glu Glu Arg Arg Lys Gln Leu Ala Lys Gln Cys Lys Ala Glu Gly Glu
 115 120 125
 Thr Ala Lys Val Ser Ile Arg Asn Ala Arg Arg Asp Gly Ile Asp Ala
 130 135 140
 Leu Lys Lys Ala Val Lys Asp Gly Leu Ala Glu Asp Glu Gln Lys Asn
 145 150 155 160
 Ala Glu Ala Lys Leu Gln Lys Val His Asp Lys Tyr Ile Ala Lys Ile
 165 170 175
 Glu Glu Met Leu Ala Glu Lys Asp Lys Glu Ile Met Thr Val
 180 185 190

<210> 8416

<211> 433

<212> PRT

<213> B.fragilis

<400> 8416

Gln Asn Asn Asn Phe Ile Ile Thr Glu Asn Gln Glu Thr Leu Leu Ile
 1 5 10 15
 Met Lys Ile Leu Phe Ser Leu Asp Val Ser Asn Gln Arg Gln Val Asp
 20 25 30
 Phe Cys Asn Arg Ile Leu Lys Ile Leu Asp Asn Lys Asp Asp Ser Asn
 35 40 45
 Asp Ile Thr Leu Ile Cys Lys Ser Gln Asn His Leu Ser Asp Tyr Leu
 50 55 60
 Tyr Ile Pro Pro Ser Ser His Ile Lys Thr Glu Glu Ala Glu Ile Ile
 65 70 75 80
 Leu Thr Tyr Gly Lys Thr Gly Leu Ser His Ile Ser Gln Phe Ala Arg
 85 90 95
 Lys Ser Asn Ile Pro Ile Ile His Phe Ile Asn Thr Glu Tyr Leu Lys
 100 105 110
 Asp Glu Tyr Leu Ser Glu Asp Gln Gln Val Glu Lys Ile Ile Leu Cys
 115 120 125
 Asp Cys Phe Asn Gln Leu Leu Glu Ser Phe Phe Gln Lys Asp Lys Met
 130 135 140
 Phe Val Leu Pro Tyr Phe Ser Ile Pro Val Val Thr Lys Asn Val Glu
 145 150 155 160
 Ile Arg Asn Lys Asn Ser Pro Lys Leu Leu Ile Ala Ile Ala His Pro
 165 170 175
 Asn Leu Lys Asn Ser Pro Val Tyr Tyr Ile Ser Asn Leu Leu Asn Ile
 180 185 190
 Leu Ser Asp Tyr Arg Ile Thr Ile Leu Tyr Asn Gly Asp Pro Leu Ile
 195 200 205
 Pro Ile Phe Asn Ser Asn Ile Thr Leu Ile Asn Val Lys Glu Ser Asn
 210 215 220
 Ile Glu Lys Val Ile Leu Ser Asn Asp Ile Ile Ile Gly Asp Gly Ile
 225 230 235 240
 Ser Ile Tyr Thr Gly Ile Met Leu Gly Lys Pro Cys Ile Val Ile Gly
 245 250 255
 Glu Gln Gly Tyr Gly Gly Leu Ile Thr Pro Gln Asn Leu Ser Gln Gln
 260 265 270
 Phe Ala Asn Lys Phe Gln Gly Arg Ile Gly Gly Ser Leu Asn Glu Tyr
 275 280 285
 Ile Pro Leu Asn Leu Ile Met Asn Asp Ile Gln Tyr Val Gln Asn Thr
 290 295 300
 Glu Lys Ser Lys Asn Ile Asp Cys Ile Ile Ile Lys Asn Lys Lys Leu
 305 310 315 320
 Leu Asp Asn Glu Tyr Arg Gln Thr Gln Gln Ser Leu Asn Asp Leu Ile
 325 330 335
 Leu Glu Val Ala Ala Asn His Lys Gln Leu Tyr Thr Phe Pro Met Glu
 340 345 350
 Ile His Leu Arg Leu Ser Asp Ala Phe His Leu Ile Lys Phe Ser Asp
 355 360 365
 Thr Lys Phe Val Leu Ala Tyr Thr Ala Asn Asn Lys Val His Ser Ser
 370 375 380
 Phe Gly Lys Glu Glu Ala Glu Ile Ile Ala Leu Phe Lys Arg Ser Cys
 385 390 395 400
 Leu Ile Lys Asp Ala Ile Asn Met Ser Pro Tyr Lys Lys Glu Pro Lys
 405 410 415
 Ile Phe Val Glu Phe Ile Gln Met Leu Phe Asn Glu Lys Ile Leu Ile
 420 425 430
 Ala

<210> 8417
 <211> 361
 <212> PRT
 <213> B.fragilis

<400> 8417

Asp	Met	Asp	Lys	Lys	Val	Lys	Trp	Gly	Ile	Val	Ile	Leu	Val	Gly	Ala
1			5					10					15		
Gly	Leu	Ile	Gly	Trp	Gly	Ile	Tyr	Ser	Arg	Leu	Pro	Lys	Ala	Asn	Glu
		20					25					30			
Glu	Leu	Ala	Ala	Ala	Asp	Lys	Val	Met	Thr	Gly	Lys	Gln	Ile	Asn	Lys
		35				40					45				
Arg	Val	Leu	Asn	Val	Asn	Ala	Lys	Ile	Ile	Lys	Pro	Gln	Leu	Leu	Thr
	50				55					60					
Asp	Gln	Ile	Gln	Ile	Ser	Gly	Ser	Leu	Met	Pro	Asp	Glu	Glu	Val	Asp
65				70					75					80	
Leu	Ser	Phe	Glu	Thr	Ser	Gly	Lys	Ile	Val	Glu	Ile	Asn	Phe	Asp	Glu
			85					90				95			
Gly	Thr	Thr	Val	Lys	Lys	Gly	Gln	Leu	Leu	Ala	Lys	Val	Asn	Asp	Arg
		100					105					110			
Gln	Leu	Gln	Ala	Gln	Leu	Gln	Arg	Leu	Val	Ala	Gln	Leu	Lys	Leu	Ala
	115					120						125			
Glu	Asp	Arg	Val	Phe	Arg	Gln	Asn	Ala	Leu	Leu	Glu	Arg	Asp	Ala	Val
	130					135					140				
Ser	Lys	Glu	Ala	Tyr	Glu	Gln	Val	Lys	Thr	Glu	Leu	Ala	Thr	Leu	Asn
145				150						155				160	
Ala	Asp	Ile	Asp	Leu	Val	Lys	Ala	Asn	Ile	Ala	Met	Thr	Glu	Leu	Arg
			165					170					175		
Ala	Pro	Phe	Asp	Gly	Val	Ile	Gly	Leu	Arg	Gln	Val	Ser	Val	Gly	Ser
		180					185					190			
Tyr	Ala	Ser	Pro	Thr	Thr	Ile	Val	Ala	Lys	Leu	Thr	Lys	Ile	Ile	Pro
	195					200						205			
Leu	Lys	Ile	Glu	Phe	Ser	Val	Pro	Glu	Arg	Tyr	Ala	Ser	Gln	Val	Lys
	210					215					220				
Lys	Gly	Thr	Asn	Leu	Asn	Phe	Glu	Leu	Glu	Gly	Lys	Leu	Ser	Ser	Phe
225				230						235				240	
Pro	Ala	Lys	Val	Tyr	Ala	Thr	Glu	Ser	Arg	Ile	Asp	Gln	Ser	Thr	Arg
			245						250				255		
Thr	Leu	Thr	Val	Arg	Ala	Leu	Tyr	Ala	Asn	Ser	Asn	Gly	Ala	Ile	Leu
		260						265					270		
Pro	Gly	Arg	Tyr	Ala	Ser	Ile	Gln	Leu	Lys	Lys	Glu	Glu	Ile	Pro	Asn
		275					280					285			
Ala	Ile	Ala	Ile	Pro	Ser	Glu	Ser	Ile	Val	Pro	Glu	Met	Gly	Lys	Asp
	290					295					300				
Lys	Val	Phe	Leu	Tyr	Lys	Ser	Gly	Lys	Ala	Glu	Pro	Val	Glu	Ile	Thr
305				310						315				320	
Ala	Gly	Ile	Arg	Thr	Glu	Ala	Glu	Val	Gln	Val	Ile	Lys	Gly	Leu	Gln
			325					330					335		
Met	Gly	Asp	Thr	Ile	Ile	Thr	Ser	Gly	Thr	Leu	Gln	Leu	Arg	Thr	Gly
		340						345					350		
Leu	Pro	Val	Thr	Leu	Asp	Asn	Ile	Asn							
		355					360								

<210> 8418
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 8418

Phe Ile Thr Lys Ile Phe Cys Ile Lys Ile Glu Ala Ile Ile Asp Asn
 1 5 10 15
 Asn Ile Arg Met Ala Asp Asn Gly Lys Tyr Cys Ile Gly Ile Thr Tyr
 20 25 30
 Ile Asp Arg Met Ile Glu Ile Gly Leu Ser Ile Phe Asn Ser Ile Leu
 35 40 45
 Phe Leu Leu Val Val Lys Leu Ile Ile Asp Pro Asp Lys Leu Phe Phe
 50 55 60
 Cys Lys Ile
 65

<210> 8419
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 8419
 Cys Ser Cys Leu Pro Ser Phe His Ile Leu Trp Met Asp Leu Pro Met
 1 5 10 15
 Gln Ala Arg His Leu Pro Val Val Ile Ser Ala Pro Val Ile Val Trp
 20 25 30
 Ser Phe Thr Val Pro Ser Asp Ser Tyr Ser Asp Gly Val Ser Asp Tyr
 35 40 45
 Gln Pro Gly Ser Pro Phe Phe Thr Val Leu Val Asp Asn His Phe Trp
 50 55 60
 Asp Tyr
 65

<210> 8420
 <211> 116
 <212> PRT
 <213> B.fragilis

<400> 8420
 Tyr Phe Asn Asn Met Lys Lys Leu Asn Ile Asn Lys Leu Ser Glu Tyr
 1 5 10 15
 Pro Val Val Asn Ile Glu Glu Gln Thr Ser Leu Lys Gly Gly Val Ser
 20 25 30
 Gln Asp Glu Phe Phe Arg Met Leu Glu Asn Asn Thr Trp Gln Gly Gly
 35 40 45
 Tyr Val Asp Gly Tyr Gly Tyr Ala Ala Pro Ala Val Thr Ile Tyr Gly
 50 55 60
 Thr Ser Trp Asn Glu Thr Gly Arg Trp Asp Ile Asp Gly Cys Pro Ala
 65 70 75 80
 Cys Gly Asn Gly Leu Gly Tyr Asp Gln Thr Lys Pro Lys Pro Glu His
 85 90 95
 Asp Ile Val Thr Ile Trp Thr His Phe Phe Cys His Lys His Ile Tyr
 100 105 110
 Tyr Gly Ser Lys
 115

<210> 8421
 <211> 186
 <212> PRT
 <213> B.fragilis

<400> 8421
 Met Val Asn Lys Tyr Phe Phe Ile Ala Ala Phe Leu Phe Trp Leu Leu
 1 5 10 15

Pro Ala Ile Val Arg Leu Cys Val Ile Asp Ile Ser Glu Ile Ala Ile
 20 25 30
 Ser His Thr Thr Thr Phe Glu Ile Asn Ser Pro Ala Asn Lys Thr Leu
 35 40 45
 Tyr Phe Leu Tyr Asn Lys Asp Lys His Ser Ala Phe Ile Thr Ile Leu
 50 55 60
 Lys Asn Asn Met Gln Gly Cys Ile Leu Asn Val Leu Gly Gly Gly Leu
 65 70 75 80
 Leu Gly Ile Gly Thr Leu Phe Asn Leu Leu Asn Gly Phe Cys Phe
 85 90 95
 Ala Asp Val Cys Cys Arg Thr Tyr Lys Leu Gly Met Ser Ile Thr Asp
 100 105 110
 Ile Phe Ala Leu Thr Leu Pro His Ser Phe Glu Leu Ile Gly Phe Trp
 115 120 125
 Ile Ser Gly Gly Ile Gly Leu Tyr Ile Ala Trp Asn Ile Ile Leu Phe
 130 135 140
 Met Tyr Thr Asp Lys Met Pro Thr Phe Lys Phe Tyr Lys Asn Ile Gly
 145 150 155 160
 Ile Asn Leu Leu Ile Ile Phe Ile Ile Ile Leu Ser Ala Ala Tyr Ile
 165 170 175
 Glu Thr Tyr Val Ser Ile Asn Met Leu Thr
 180 185

<210> 8422
 <211> 270
 <212> PRT
 <213> B.fragilis

<400> 8422

Lys Ser Ser Lys His Leu Gln Val Glu Met Thr Tyr Val Asp Asn Phe
 1 5 10 15
 Leu Lys Phe Ile Phe Val Ser Ser Cys Arg His Cys Asn Phe Met Ala
 20 25 30
 Ser Asn Tyr Gln Pro Ile Thr Met Gln Asp Phe Val His Leu His Val
 35 40 45
 His Thr Gln Tyr Ser Leu Leu Asp Gly Gln Ala Ser Val Ser Ala Leu
 50 55 60
 Val Asp Lys Ala Met Lys Asp Gly Met Lys Gly Ile Ala Val Thr Asp
 65 70 75 80
 His Gly Asn Met Cys Ala Ile Lys Glu Phe Thr Asn Tyr Val Asn Lys
 85 90 95
 Lys Asn Gly Gly Pro Lys Gly Glu Ile Lys Asp Leu Lys Lys Arg Ile
 100 105 110
 Ala Ala Ile Glu Ala Gly Glu Val Glu Cys Ala Asp Lys Asp Ala Glu
 115 120 125
 Ile Ala Asp Cys Lys Ala Lys Ile Ala Asp Ala Glu Gly Arg Leu Phe
 130 135 140
 Lys Pro Ile Ile Gly Cys Glu Met Tyr Val Ala Arg Arg Thr Met Asp
 145 150 155 160
 Lys Lys Glu Gly Lys Pro Asp Gln Ser Gly Tyr His Leu Ile Val Leu
 165 170 175
 Ala Lys Asn Glu Lys Gly Tyr His Asn Leu Ile Lys Leu Val Ser Arg
 180 185 190
 Ala Trp Thr Lys Gly Tyr Tyr Met Arg Pro Arg Thr Asp Arg Asn Glu
 195 200 205
 Leu Glu Lys Tyr His Glu Gly Leu Ile Ile Cys Ser Ala Cys Leu Gly
 210 215 220
 Gly Glu Val Pro Lys Lys Ile Thr Gln Gly Leu Leu Ala Glu Ala Glu
 225 230 235 240

77	78	79	80	81	82
83	84	85	86	87	88
89	90	91	92	93	94
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<400> 8423

Ile	Gly	Ile	Lys	Trp	Leu	Lys	Tyr	Leu	Arg	Pro	Leu	Ser	Leu	Thr	Ser
1				5					10					15	
Gly	Ile	Trp	Leu	Thr	Lys	Arg	Ile	Ile	Lys	Asn	Glu	Met	Lys	Thr	Lys
			20					25					30		
Leu	Thr	Asn	Cys	Val	Lys	Thr	Val	Leu	Leu	Ser	Phe	Met	Leu	Gly	Val
		35					40					45			
Leu	Phe	Ala	Cys	Cys	Gln	Gly	Ala	Ala	Ser	Ser	Gly	Asn	Ala	Gly	Lys
	50					55					60				
Asn	Ala	Ser	Arg	Val	Arg	Ile	Ala	Ser	Asn	Asp	Ser	Ala	Lys	Leu	Val
65					70					75					80
Pro	Asp	Lys	Ala	Leu	Asn	Asp	Ala	Ser	Cys	Val	Leu	Ala	Gly	Leu	Pro
				85					90					95	
Val	Asp	Lys	Ala	Ser	Gly	Lys	Leu	Tyr	Ala	Leu	Thr	Arg	Thr	Lys	Glu
			100					105					110		
Trp	Lys	Asn	His	Ala	Arg	Tyr	Met	Asp	Gln	Ile	Trp	Asn	Val	Phe	Arg
		115					120					125			
Gln	Thr	Ala	Pro	Arg	Leu	Val	Ala	Phe	Ser	Gln	Thr	Glu	Leu	Glu	Asp
						135					140				
Ile	Asn	Thr	Arg	Cys	His	Thr	Leu	Phe	Tyr	Pro	Phe	Gly	Gly	Pro	Asp
145				150						155					160
Phe	Leu	Phe	Ala	Asn	Ala	Phe	Phe	Pro	Glu	Met	Asp	Thr	Tyr	Val	Leu
				165					170					175	
Ile	Gly	Leu	Glu	Pro	Ala	Gly	Thr	Ala	Pro	Lys	Val	Lys	His	Pro	Ser
			180					185					190		
Ala	Glu	Thr	Tyr	Arg	Leu	Tyr	Gln	Asn	Ala	Val	Ser	Asn	Val	Leu	Asn
		195					200					205			
Leu	Ser	Phe	Phe	Asn	Asp	Met	Asp	Lys	Glu	Leu	Ala	Asn	Asp	Thr	Ile
	210					215					220				
Asp	Gly	Val	Val	Pro	Ile	Tyr	Ser	Leu	Leu	Met	Ala	Arg	Gly	Asn	Arg
225				230						235					240
Lys	Ile	Val	Ser	Ile	Gln	Glu	Val	Trp	Leu	Ser	Glu	Thr	Gly	Asp	Leu
				245					250					255	
Phe	Glu	Arg	Lys	Glu	Gly	Asp	Thr	Ile	Arg	Asn	Thr	Cys	Ser	Ala	Gly
			260					265					270		
Met	Glu	Val	Arg	Phe	Phe	Arg	Pro	Gly	Ala	Ser	Arg	Leu	Gln	Thr	Leu
		275					280					285			
Tyr	Tyr	Phe	Cys	Thr	Asp	Ile	Ser	Asn	Glu	Gly	Leu	Gln	Ala	Asn	Arg
	290					295					300				
Pro	Leu	Gln	Ala	Phe	Met	Asp	Arg	Phe	Asp	Ala	Glu	Thr	Thr	Ala	Thr
305					310					315					320
Phe	Val	Lys	Ser	Ala	Ser	Tyr	Leu	Met	His	Glu	Pro	Ala	Phe	Ser	Arg
				325					330					335	
Ile	Arg	Glu	Thr	Ile	Leu	Gln	Lys	Ser	Ser	Ala	Val	Val	Gln	Asp	Asp
			340					345					350		
Ser	Ser	Ile	Pro	Le											

Gln Pro Gln Leu Arg Asp Ala Tyr Gln Leu Gly Asp Pro Lys Pro Leu
 385 390 395 400
 Asn Phe Arg Ile Gly Tyr Ala Arg Gln Ser Asn Leu Gln Val Ala Arg
 405 410 415
 Arg Lys

<210> 8424
 <211> 220
 <212> PRT
 <213> B.fragilis

<400> 8424
 Ile Leu Gln Lys His Arg His Gln Phe Ile Asp His Phe His Asn Tyr
 1 5 10 15
 Ser Phe Ser Cys Leu His Arg Asn Leu Cys Ile Asn Lys Tyr Val Asn
 20 25 30
 Met Lys Arg Ile Ile Asn Thr Leu Glu Lys Met Pro Lys Trp Tyr Gly
 35 40 45
 Phe Leu Thr Ile Leu Leu Tyr Ser Leu Leu Leu Ala Glu Phe Leu Ile
 50 55 60
 Thr Thr Asn His Leu Val Asn Asn Asn Asn Leu Glu Thr Asp Arg Leu
 65 70 75 80
 Phe Val Ile Leu Ala Arg Met Ser Tyr Ile Ile Val Leu Ser Ala
 85 90 95
 Ile Val Ile Trp Leu Ile Ser Thr Phe Leu Phe His Leu Thr Ala Ile
 100 105 110
 Leu Phe Asn Gly Tyr Ala Pro Phe Lys His Leu Leu Tyr Ile Ser Ser
 115 120 125
 Tyr Phe Tyr Ile Ile Pro Ala Ile Ser Val Phe Ile Ser Ile Phe Leu
 130 135 140
 Leu Asn Gln Lys Thr Glu Tyr Ser Thr Ser Asn Ala Val Thr Thr Leu
 145 150 155 160
 Gln Asn Asn Tyr Ser Leu Gly Leu Pro Ile Met Leu Val Asn Tyr Ser
 165 170 175
 Phe Ile Pro Tyr Tyr Leu Leu Cys Met Ile Leu Ile His His Leu Tyr
 180 185 190
 Lys Val Arg Leu Arg Tyr Ala Ile Ala Ser Val Val Ile Pro Ile Leu
 195 200 205
 Ser Val Trp Ala Ile Thr Lys Leu Phe Thr Leu Leu
 210 215 220

<210> 8425
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 8425
 His Ser Lys Lys Leu Ile Leu Ala Asn Ser Ser Phe Lys Arg Ser Leu
 1 5 10 15
 Leu Phe Tyr Ile His Tyr Arg Ile Phe Thr Gln Phe Ile Tyr Ile Gln
 20 25 30
 Phe Phe His Ile Val Lys Ile Leu Val Arg Arg Trp Leu Phe Leu Asp
 35 40 45
 Phe Phe Val Lys Gln Tyr Phe Leu Leu Phe Asp Leu Leu Gly Gly Met
 50 55 60
 Val Cys Gln Gly Asn His Gly Arg Tyr Lys His Asn Phe Cys Leu Asn
 65 70 75 80
 Leu His Cys Asn Val Leu Phe Leu Leu Ala Val Phe Thr Cys Leu Val

85 90 95
 Ile Leu Ile Leu Leu Phe Ile Ser Leu
 100 105

<210> 8426
 <211> 101
 <212> PRT
 <213> B.fragilis

<400> 8426
 Ile Ser Lys Lys Val Lys Thr Asn Lys Lys Ala Ile Leu Gly Met Leu
 1 5 10 15
 Val Ala Ile Val Ile Ser Leu Gly Val Met Gly Gly Ile Asn Glu Asn
 20 25 30
 Lys Cys Asp Tyr Asn Leu Gln Glu Ala Thr Val Ala Met Thr Tyr Ala
 35 40 45
 Ala Gly Thr Gly Glu Tyr Gly Pro Glu Ala Ser Gly Lys Leu Ala Val
 50 55 60
 Gly Ala Leu Ala Met Gly Lys Val Thr Glu Thr Leu Gly Thr Cys Ala
 65 70 75 80
 Val Gly Leu Gly Trp Cys Pro Ala Gly Trp Ile Ala Gly Val Gly Ala
 85 90 95
 Ala Ala Ala Gly Leu
 100

<210> 8427
 <211> 740
 <212> PRT
 <213> B.fragilis

<400> 8427
 Lys Arg Lys Asn His Leu Gln Ile Ser Lys Lys Lys Ile Gln Arg Thr
 1 5 10 15
 Thr Met Arg Ile Asn Phe Pro Ser Tyr Ile Gln His Asp Gln Met Asp
 20 25 30
 Cys Gly Pro Ala Cys Leu Lys Ile Ile Ala Gln Asn Tyr Gly Lys Arg
 35 40 45
 Phe Ser Leu Lys Tyr Leu Arg Asp Arg Cys Tyr Ala Thr Arg Glu Gly
 50 55 60
 Val Ser Leu Phe Asp Ile Gly Arg Ala Ala Glu Ile Gly Phe Arg
 65 70 75 80
 Thr Leu Ala Ile Lys Val Thr Phe Glu Asp Leu Ile Glu Lys Met Pro
 85 90 95
 Leu Pro Leu Ile Val His Trp Lys Gln Ser His Phe Val Val Val His
 100 105 110
 Lys Ile Thr Asn Arg Lys Val Tyr Ile Ser Asp Pro Ala Gln Gly Leu
 115 120 125
 Thr His Tyr Asn His Lys Glu Phe Arg Glu Ala Trp Glu Met Cys Asn
 130 135 140
 Gly Leu Gly Thr Ile Met Ile Leu Glu Thr Thr Pro Glu Phe His Asn
 145 150 155 160
 Met Asn Glu Met Glu Thr Arg Ala Ser Phe Ser His Phe Met Lys Tyr
 165 170 175
 Leu Lys Pro His Arg Tyr Leu Gly Gln Val Ile Val Gly Met Val
 180 185 190
 Ala Gly Ile Leu Ile Gly Leu Leu Ser Pro Phe Ile Ser Gln Ser Ile
 195 200 205
 Val Asp Phe Gly Ile Gly Ser Gly Asn Ile Gln Phe Val Asn Thr Met
 210 215 220

Leu 225	Ile	Ala	Gly	Met	Ile 230	Leu	Ala	Phe	Ser	Ser 235	Met	Ala	Ser	Asp	Phe 240
Ile	Gln	Ser	Arg	Leu 245	Met	Leu	Tyr	Val	Ser 250	Glu	Arg	Ile	Asn	Met	Gly 255
Met	Val	Ser	Asp	Phe 260	Leu	Arg	Lys	Thr	Met 265	Ser	Leu	Pro	Ile	Thr	Phe 270
Phe	Glu	Arg	Lys	Met 275	Val	Ser	Asp	Leu	Leu 280	Thr	Arg	Ile	Asp	Asp	His 285
Gly	Arg	Ile	Gln	Ser 290	Phe	Ile	Met	Ser	Thr 295	Phe	Leu	Gly	Ile	Phe	Ile 300
Asn 305	Ile	Leu	Leu	Phe 310	Val	Ile	Tyr	Ser	Leu 315	Leu	Met	Leu	Tyr	Tyr	Glu 320
Ser	Asn	Met	Phe	Leu 325	Val	Phe	Met	Ile	Gly 330	Asn	Thr	Val	Tyr	Thr	Gly 335
Trp	Ile	Phe	Leu 340	Phe	Leu	Lys	Gln	Arg 345	Lys	Lys	Leu	Asp	Asn	Gln	Leu 350
Phe	Gly	Cys	Arg 355	Ala	Thr	Asn	Gln	Asn 360	Asp	Leu	Leu	Glu	Leu	Leu	Glu 365
Asn 370	Val	Asn	Glu	Ile 375	Lys	Ile	Asn	Asn	Ile 380	Ala	Asn	Lys	Arg	Arg	Trp 385
Lys 385	Trp	Glu	Leu	Ser 390	Arg	Phe	Lys	Ile	Tyr 395	Gly	Leu	Arg	Val	Lys	Asn 400
Met	Asn	Leu	Asp 405	Gln	Ile	Glu	Ala	Thr 410	Gly	Ala	Ser	Phe	Ile	Ile	His 415
Leu	Gln	Gly	Leu 420	Phe	Ile	Thr	Tyr	Ile 425	Ala	Ala	Leu	Asn	Val	Ile	Glu 430
Gly	Thr	Met 435	Thr	Leu	Gly	Met 440	Met	Met 440	Ala	Ala	Gln	Tyr 445	Ile	Leu	Gly 445
Gln 450	Leu	Asn	Ala	Pro 455	Ile	Lys	Ser	Met 455	Ile	Gly	Tyr 460	Val	His	Ser	Leu 460
Gln 465	Phe	Ala	Arg 470	Ile	Ser	Leu	Lys	Arg 475	Val	Asn	Glu 475	Val	Ile	Trp	Glu 480
Glu	Glu	Pro	Glu 485	Ile	Ser	Glu	Ser	Lys 490	Val	Ser	Ile 495	Pro	Ile	Glu	Lys 495
Gly	Val	Lys 500	Val	Lys	Asp	Leu	Asp 505	Phe 505	Tyr	Tyr	Asn 510	Pro	Asn	Leu	Asn 510
Lys	Val	Leu 515	Asp	Asn	Ile	Asn 520	Leu	Glu 520	Ile	Pro	Glu 525	Gly	Lys	Ile	Thr 525
Ala 530	Ile	Val	Gly	Glu	Ser	Gly 535	Ser	Gly 540	Lys	Thr	Thr 540	Leu	Leu	Lys	Leu 540
Leu 545	Leu	Arg	Phe	Tyr 550	Lys	Pro	Thr	Asn 555	Gly	Glu 555	Ile	Glu	Val	Gly	Gly 560
Val	Pro	Leu	Asp 565	Asn	Ile	Asp	Leu	Tyr 570	Arg	Trp	Arg 575	Asn	Ser	Cys	Gly 575
Ala	Val	Leu 580	Gln	Asp	Gly	Lys	Leu	Phe 585	Asn	Asp	Thr 590	Ile	Leu	Tyr	Asn 590
Ile	Thr	Leu 595	Glu	Asp	Glu	Glu	Met 600	Asn 600	Val	Asn	Gln 605	Lys	Gln	Leu	Val 605
Lys	Ala 610	Ile	Gln	Leu	Ala 615	Asn	Ala	Glu 620	Asn	Phe 620	Ile	Asn	Ala	Arg	Pro 620
Leu 625	Lys	Leu	Tyr	Thr 630	Pro	Leu	Gly	Thr 635	Asn	Gly 635	Ser	Gly	Leu	Ser	Gln 640
Gly	Gln	Lys	Gln 645	Arg	Ile	Leu	Ile	Ala 650	Arg	Ala 650	Ile	Tyr	Lys	Asn	Pro 655
Asp	Phe	Ile 660	Phe	Leu	Asp	Glu	Ala 665	Thr 665	Asn	Ser	Leu 670	Asp	Thr	Asn	Asn 670
Glu	Lys	Gln 675	Ile	Ser	Lys	Asn 680	Leu	Glu 680	Thr	Ile	Leu 685	Glu	Gly	Lys	Thr 685
Ala	Ile	Val	Ile	Ala	His	Arg	Leu	Ser	Thr	Val	Lys	Asn	Ala	His	Asn

690 695 700
 Ile Val Val Met Glu Lys Gly Lys Ile Val Glu Gln Gly Thr His Gln
 705 710 715 720
 Glu Leu Ile Asn Leu Lys Gly Ile Tyr Tyr Asp Leu Ile Ser Ser Gln
 725 730 735
 Leu Glu Ile Gly
 740

<210> 8428
 <211> 445
 <212> PRT
 <213> B.fragilis

<400> 8428

Leu Asn Glu Lys His Met Arg Gln Phe Ile Leu Ile Met Ile Cys Ile
 1 5 10 15
 Leu Leu Gln Val Ile His Val His Ala Gly Ser Lys Asp Ile Thr Trp
 20 25 30
 Lys Trp Asp Tyr Ser Glu Ala Asp Asp Ile Phe Ile Asp Leu Leu Gly
 35 40 45
 Lys Ala Ala Thr Gly Phe Met Glu Thr Asn Thr Pro Asn Cys Tyr Gly
 50 55 60
 Gly Lys Leu Val Val Lys Leu Pro Glu Gly Leu His Phe Lys Gln Thr
 65 70 75 80
 Glu Ala Pro Ala Phe Leu Leu Ile Gly Asn Ala Glu Glu Ile Ala Phe
 85 90 95
 Asn Val Asp Val Asn Asp Ser Met Ala Ile Leu Ser Leu Lys Thr Ser
 100 105 110
 Ser Val Gln Thr Val Pro Ser Glu Ala Ile Asn Ile Thr Leu Asn Pro
 115 120 125
 Lys Ala Ile Lys Gly Lys Leu Arg Lys Gly Met Asn Thr Thr Gly Arg
 130 135 140
 Leu Ser Phe His Pro Ser Glu Ile Pro Thr Val Phe Lys Ser Pro Ile
 145 150 155 160
 Thr Gly Arg Thr Tyr His Leu Val Phe Asn Asp Glu Phe Asp Asp Gly
 165 170 175
 Val Ile Asp Thr Leu Lys Trp Asp Thr Arg Ser Arg Arg Ser Pro Phe
 180 185 190
 Thr Arg Arg Gly Met Tyr Gln Glu Lys Pro Tyr Tyr Val Leu Cys His
 195 200 205
 Glu Asp Trp Thr Lys Glu Leu His Gly Glu Leu Arg Leu Glu Val Ser
 210 215 220
 Lys Tyr Ser Thr Gln Asn Asn Val Val Met Thr Gly Gly Ile Leu Ser
 225 230 235 240
 Leu Gly Arg Phe Met Ala Arg Tyr Gly Tyr Tyr Glu Thr Lys Ala Ser
 245 250 255
 Phe Arg Asp Cys Ile Gly Glu Gly Tyr Trp Pro Ala Phe Trp Ile His
 260 265 270
 Phe Asp Glu Ala Asp Lys Tyr Gly Lys Gly Thr Glu Ile Asp Val Phe
 275 280 285
 Glu Tyr Ile Pro Lys Asp Lys Gln Ile Phe Gln Thr Leu His Trp Tyr
 290 295 300
 Lys Lys Gln Ala Met Glu Glu Gln Gln Ser Glu Val Gln His Ala Ala
 305 310 315 320
 Leu Asp Tyr Asp Lys Ser Gly Gln Phe Lys Glu His Arg Ser Ser Thr
 325 330 335
 Glu Tyr Phe Val Leu Asp Glu Ala Gln Ser Lys Glu His Thr Phe Ala
 340 345 350
 Val Glu Trp Thr Pro Glu Glu Leu Ile Phe Tyr Thr Asp Gly Lys Val

355 360 365
 Thr Arg Arg Val Asn Arg Lys Asp Asp Pro Lys Gln Val Pro Ser Ala
 370 375 380
 Tyr Gln Met Val Tyr Phe Ser Cys Ser Ala Gly Glu Trp Gly Gly Asn
 385 390 395 400
 Val Met Glu Asn Gln Val Pro Ala Tyr Val Tyr Phe Asp Tyr Cys Arg
 405 410 415
 Cys Tyr Gln Glu Ser Asp Gln Asp Ala Ile Tyr Thr Val Lys Gly Asn
 420 425 430
 Gly Met Lys Val Ser Ala Ser Arg Arg Val Gly Lys Leu
 435 440 445

<210> 8429
 <211> 149
 <212> PRT
 <213> B.fragilis

<400> 8429
 Ile Cys Arg Asn Asn Met Ser Gly Arg Pro Ile His Ile His Val Leu
 1 5 10 15
 Ser Pro Asp Arg Pro Ile Asn Ile Lys Ile Phe Phe Met Ala Glu His
 20 25 30
 Asn Leu Leu Gly Lys Ala Gly Glu Asp Ala Ala Val Asp Tyr Leu Glu
 35 40 45
 Arg His Asp Tyr Val Ile Arg His Arg Asn Trp Arg Lys Gly His Phe
 50 55 60
 Glu Leu Asp Ile Val Ala Ala Lys Asn Gly Glu Leu Ile Ile Val Glu
 65 70 75 80
 Val Lys Thr Arg Ser Asp Thr Asp Phe Ala Leu Pro Gln Asp Ala Val
 85 90 95
 Thr Pro Gln Lys Ile Arg Arg Thr Val Ile Ala Ala Asp Thr Tyr Ile
 100 105 110
 Lys Leu Phe Gln Ile Asp Glu Pro Val Arg Phe Asp Ile Ile Thr Val
 115 120 125
 Ile Gly Lys Thr Gly Asn Phe Arg Ile Glu His Ile Lys Glu Ala Phe
 130 135 140
 Tyr Pro Pro Leu Phe
 145

<210> 8430
 <211> 120
 <212> PRT
 <213> B.fragilis

<400> 8430
 Ser Phe Met Asn Ile Glu Ser Ala Arg Glu Tyr Cys Leu Arg Lys Lys
 1 5 10 15
 Ala Val Thr Glu Cys Phe Pro Phe Asp Glu Tyr Ser Leu Val Met Lys
 20 25 30
 Val Met Asp Lys Met Phe Ala Leu Ile Asp Leu Glu Gly Ala Asn Thr
 35 40 45
 Ile Ser Leu Lys Cys Asp Pro Asp Tyr Ala Ile Glu Leu Arg Glu His
 50 55 60
 Tyr Ser Ala Ile Glu Gly Ala Tyr His Phe His Lys Lys Tyr Trp Asn
 65 70 75 80
 Gln Val Tyr Phe Asp Arg Asp Ala Asp Asp Lys Leu Ile Lys Gln Leu
 85 90 95
 Ile Asp His Ser Tyr Asp Glu Val Met Lys Lys Phe Thr Lys Lys Leu
 100 105 110

Arg Thr Glu Tyr Asp Ala Leu Pro
115 120

<210> 8431
<211> 232
<212> PRT
<213> B.fragilis

<400> 8431

Ile Lys Met Lys Lys Met Lys Thr Leu Thr Leu Phe Leu Ser Leu Leu
1 5 10 15
Phe Ser Phe Pro Phe Val Leu Ser Ala Gln Met Val Gly Glu Thr Leu
20 25 30
Gln Lys Val Ser Ala Ala Leu Asp Asn Arg Gln Trp Asp Gln Ala Val
35 40 45
Thr Leu Phe Arg Gln Ala Val Asn Thr Asn Val Glu Lys Ala Glu Met
50 55 60
Phe Tyr Trp Thr Gly Val Asp Lys Ser Leu Glu Val Ser Ser Arg Met
65 70 75 80
Gly Arg Glu Leu Ala Ala Tyr Tyr Lys Lys Ser Arg Ser Tyr Asp Lys
85 90 95
Ala Tyr Leu Phe Tyr Lys Glu Leu Leu Gln Lys Ser Pro Asn Asp Val
100 105 110
Asn Cys Leu Val Ser Cys Ala Glu Met Glu Val Cys Arg Gly Arg Glu
115 120 125
Ser Glu Ala Leu Glu Thr Tyr Arg Lys Val Leu Ser Leu Asp Ala Asp
130 135 140
Asn Leu Ala Ala Asn Ile Phe Ile Gly Asn Tyr Leu Tyr Leu Lys Ala
145 150 155 160
Glu Arg Glu Lys Lys Gln Leu Glu Ala Asp Tyr Lys Lys Ile Ser Ala
165 170 175
Pro Thr Arg Met Gln Tyr Ala Arg Tyr Arg Asp Gly Leu Ser Arg Val
180 185 190
Met Ser Thr Gly Tyr Gly Lys Ala Arg Glu Tyr Leu Gln Lys Val Ile
195 200 205
Ser Gln Phe Pro Ser Thr Glu Ala Gln Lys Thr Leu Glu Arg Ile Lys
210 215 220
Leu Ile Glu Lys Glu Val Asn Arg
225 230

<210> 8432
<211> 690
<212> PRT
<213> B.fragilis

<220>
<221> UNSURE
<222> (45), (434), (449), (679), (683), (684), (685), (686), (687)
<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8432

Tyr Arg Arg Lys Ser Thr Arg Thr Phe His Pro Tyr Leu Gly Leu Met
1 5 10 15
His Thr Ala Glu Phe Asn Asn Leu Ile Val Lys Glu Glu Lys Arg
20 25 30
Pro His His Pro Phe Ser Val Ile Ser Asp Glu Pro Xaa Trp Gly Pro
35 40 45
Ala Asp Ile Lys Ser Tyr Met Lys Met Asn Gly Val Pro Met Val Gly
50 55 60

Ile	Val	Val	Ile	Pro	Gln	Arg	Gly	Ala	Asn	His	Ile	Lys	Ile	Ala	Asp
65					70					75					80
Ala	Val	Tyr	Glu	Arg	Met	Glu	Lys	Met	Gln	Lys	Asp	Leu	Pro	Glu	Asp
				85					90					95	
Val	Lys	Tyr	Ser	Tyr	Gly	Phe	Asp	Asn	Thr	Lys	Phe	Ile	Arg	Ala	Ser
			100					105					110		
Ile	Ser	Glu	Val	Lys	Glu	Thr	Val	Tyr	Val	Ala	Phe	Ile	Leu	Val	Ile
		115					120						125		
Ile	Ile	Ile	Phe	Leu	Phe	Leu	Arg	Asp	Trp	Arg	Val	Thr	Leu	Val	Pro
	130					135					140				
Cys	Ile	Val	Ile	Pro	Val	Ser	Leu	Ile	Gly	Ala	Phe	Phe	Val	Met	Tyr
145					150					155					160
Leu	Ala	Asp	Phe	Ser	Ile	Asn	Val	Leu	Ser	Met	Leu	Ala	Val	Val	Leu
				165					170					175	
Ala	Val	Gly	Leu	Val	Val	Asp	Asp	Ala	Ile	Val	Met	Thr	Glu	Asn	Ile
			180					185					190		
Tyr	Val	Arg	Ile	Glu	Lys	Gly	Met	Pro	Pro	Lys	Glu	Ala	Gly	Ile	Glu
		195					200					205			
Gly	Ala	Lys	Glu	Ile	Phe	Phe	Ala	Val	Ile	Ser	Thr	Thr	Ile	Thr	Leu
	210					215						220			
Val	Ala	Val	Phe	Phe	Pro	Ile	Val	Phe	Met	Glu	Gly	Met	Thr	Gly	Arg
225					230					235					240
Leu	Phe	Arg	Glu	Phe	Ser	Ile	Val	Ile	Ser	Gly	Ser	Val	Ile	Ile	Ser
				245					250				255		
Ser	Phe	Ala	Ala	Leu	Thr	Phe	Thr	Pro	Met	Leu	Ala	Thr	Lys	Leu	Leu
			260					265					270		
Val	Lys	Arg	Glu	Lys	Gln	Asn	Trp	Phe	Tyr	Leu	Lys	Thr	Glu	Pro	Phe
		275					280						285		
Phe	Glu	Gly	Met	Ser	Arg	Leu	Tyr	Ser	Arg	Ser	Leu	Ala	Val	Phe	Leu
	290					295					300				
His	Lys	Arg	Trp	Ile	Ala	Leu	Pro	Phe	Val	Ala	Ile	Thr	Ile	Gly	Ile
305					310					315					320
Ile	Ala	Phe	Leu	Trp	Asn	Tyr	Ile	Pro	Ala	Glu	Met	Ala	Pro	Leu	Glu
			325					330					335		
Asp	Arg	Ser	Gln	Ile	Ser	Ile	Asn	Thr	Arg	Gly	Ala	Glu	Gly	Val	Thr
			340					345					350		
Tyr	Glu	Tyr	Ile	Arg	Asp	Tyr	Thr	Glu	Asp	Ile	Asn	Asp	Leu	Val	Asp
		355				360						365			
Ser	Ile	Val	Pro	Asp	Ala	Glu	Ser	Val	Thr	Ala	Arg	Val	Ser	Ser	Gly
	370					375					380				
Ser	Gly	Asn	Val	Arg	Ile	Thr	Leu	Lys	Asp	Met	Lys	Asp	Arg	Asp	Tyr
385				390						395					400
Thr	Gln	Met	Asp	Val	Ala	Glu	Lys	Leu	Ser	Ala	Ala	Val	Gln	Thr	Lys
				405					410					415	
Thr	Met	Ala	Arg	Ser	Phe	Val	Gln	Gln	Ser	Ser	Ser	Phe	Gly	Gly	Arg
			420					425					430		
Arg	Xaa	Gly	Met	Pro	Val	Gln	Tyr	Val	Leu	Gln	Ala	Thr	Asn	Ile	Glu
		435					440					445			
Xaa	Leu	Gln	Glu	Val	Leu	Pro	Lys	Phe	Met	Ala	Lys	Val	Tyr	Glu	Asn
	450					455					460				
Pro	Val	Phe	Gln	Met	Ala	Asp	Val	Asp	Leu	Lys	Phe	Ser	Lys	Pro	Glu
465					470					475					480
Ala	Arg	Ile	Asn	Ile	Asn	Arg	Asp	Lys	Ala	Ser	Ile	Met	Gly	Val	Ser
			485					490					495		
Thr	Arg	Asn	Ile	Ala	Gln	Thr	Leu	Gln	Tyr	Gly	Leu	Ser	Gly	Gln	Arg
		500						505					510		
Met	Gly	Tyr	Phe	Tyr	Met	Asn	Gly	Lys	Gln	Tyr	Glu	Ile	Leu	Gly	Glu
		515					520					525			
Ile	Asn	Arg	Gln	Gln	Arg	Asn	Thr	Pro	Ala	Asn	Leu	Lys	Ser	Ile	Tyr

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530 535 540
 Ile Arg Ser Asp Lys Gly Asp Met Val Gln Leu Asp Asn Leu Ile Glu
 545 550 555 560
 Leu Thr Gly Gly Ile Ala Pro Pro Lys Leu Tyr Arg Tyr Asn Arg Phe
 565 570 575
 Val Ser Ala Thr Val Ser Ala Gly Leu Ala Glu Gly Lys Thr Ile Gly
 580 585 590
 Gln Gly Leu Asp Glu Met Asp Lys Ile Ala Lys Glu Thr Leu Asp Asp
 595 600 605
 Thr Phe Arg Thr Ala Leu Thr Gly Asp Ser Lys Glu Tyr Arg Glu Ser
 610 615 620
 Ser Ser Ser Leu Met Phe Ala Phe Ile Leu Ala Ile Val Leu Ile Tyr
 625 630 635 640
 Leu Ile Leu Ala Ala Gln Phe Glu Ser Phe Lys Asp Pro Leu Ile Ile
 645 650 655
 Met Leu Thr Val Pro Leu Ala Ile Ala Gly Ala Leu Val Phe Thr Thr
 660 665 670
 Gly Leu Glu Gly Ser Asp Xaa Cys Ser Cys Xaa Xaa Xaa Xaa Xaa Arg
 675 680 685
 Ser Ile
 690

<210> 8433
 <211> 186
 <212> PRT
 <213> B.fragilis

<400> 8433
 Ala Met Arg Lys Asn Phe Ser Thr Ile Leu Ile Val Gly Ala Ala Leu
 1 5 10 15
 Leu Val Ala Ser Cys Val Gln Gln Lys Gly Ser Phe Ser Pro Val Asp
 20 25 30
 Tyr Val Asn Pro Leu Met Gly Thr Glu Ser Thr Tyr Ala Phe Ser His
 35 40 45
 Gly Asn Thr Tyr Pro Ala Val Ala Val Pro Trp Gly Met Asn Phe Trp
 50 55 60
 Ser Pro Gln Thr Gly Glu Asn Gly Ser Gly Trp Met Tyr Thr Tyr Thr
 65 70 75 80
 Asp Ser Leu Ile Arg Gly Phe Arg Gln Thr His Gln Pro Ser Pro Trp
 85 90 95
 Ile Asn Asp Tyr Gly Thr Phe Ser Val Met Pro Leu Ser Gly Val Leu
 100 105 110
 Lys Met Asp His Lys Glu Arg Gly Val Pro Phe Ser His Thr Gln Glu
 115 120 125
 Glu Ala Ala Pro Tyr Ser Tyr Ser Val Thr Phe Ala Asp Gly Leu Arg
 130 135 140
 Thr Glu Leu Ser Ala Thr Ser Arg Gly Ala Val Phe Glu Val Thr Phe
 145 150 155 160
 Pro Gln Asp Ser Ala Gln Tyr Ile Val Val Asp Ala Tyr Asn Gly Gly
 165 170 175
 Ser Ala Leu Thr Ile Asp Arg Glu Asn Arg
 180 185

<210> 8434
 <211> 525
 <212> PRT
 <213> B.fragilis
 <400> 8434

Lys Asn Thr Asp Ser Met Asn Val Asn Lys Pro Thr Thr Glu Lys Lys
 1 5 10 15
 Leu Ile Asp Leu Asn Asn Asp Ile Ile His Asn Phe Asp Val Ser Ile
 20 25 30
 Val Met Ser Phe Tyr Lys Arg Tyr Thr Glu Phe Lys Lys Val Leu Pro
 35 40 45
 His Asn Ala Pro Tyr Leu Gln Arg Asn Gly Ile Glu Val Ile Ile Val
 50 55 60
 Leu Asp Asp Pro Asp Glu Lys Ser Glu Leu Leu Met Leu Leu Gln Asn
 65 70 75 80
 Tyr Pro Phe Ile Asn Trp Lys Leu Ile Ile Asn Glu Arg Lys His Ala
 85 90 95
 Pro Arg Asn His Ala Ser Val Leu Asn Val Gly Leu Lys His Ala Thr
 100 105 110
 Lys Lys Tyr Ile Leu Gln Ile Asp Pro Glu Val Glu Phe Leu Thr Asp
 115 120 125
 Ile Ile Trp Gln Met Arg Asp Ala Ile Glu Lys Tyr Pro Met His Tyr
 130 135 140
 Ile Leu Ala Met Met Ala Tyr Val Pro Tyr Glu Gln Glu Leu Thr Glu
 145 150 155 160
 Asn Asn Ile Lys Glu Leu Asp Phe Ile Pro Trp Gly Asn Leu Met Val
 165 170 175
 Glu Arg Asn His Leu Tyr Lys Leu His Gly Tyr Asp Glu Thr Phe Ile
 180 185 190
 Thr Trp Gly Glu Asp Asn Asn Met Arg Ala Arg Leu Asp Met Ser
 195 200 205
 Gly Ile Lys Lys Phe Ile Leu Pro Glu Ala Lys Thr Ile His Arg Glu
 210 215 220
 Lys Asn Tyr Asp Pro Asn Glu Arg Ser Lys Arg Ile Asn Lys His Ser
 225 230 235 240
 Ile Ser Asp Trp Arg Lys Met Asn Tyr Pro Ser Glu Ala Ile Ala Asn
 245 250 255
 Lys Asp Ile Trp Gly Ser Glu Phe Asn Lys Val Ile Tyr Asp Trp Gln
 260 265 270
 Asp Asn Gln Tyr Ala Lys Asp Leu Cys Tyr Thr Tyr Leu Gln Gln Phe
 275 280 285
 Ile Gly Phe Glu Ile Arg His Pro Ala Ala Phe Arg Lys Arg His Lys
 290 295 300
 Lys Ile Val Leu Cys Gln Ala Tyr Asn Glu Glu Lys Leu Ile Glu Gly
 305 310 315 320
 Phe Leu Thr Asn Met Ala Ser Tyr Phe Asp Gly Ile Ile Leu Leu Asp
 325 330 335
 Asp Glu Ser Thr Asp Arg Thr Trp Asp Leu Ala Ile His Asp Lys Ile
 340 345 350
 Leu Leu Lys Val Lys Lys Lys Arg Ser Gly Phe Asn Asp Leu Glu Asn
 355 360 365
 Arg Asn Ile Leu Leu Asp Leu Ser Ala Phe Phe Gln Ser Glu Trp Phe
 370 375 380
 Cys Phe Met Asp Ile Asp Glu Arg Phe Asp Glu Arg Phe Thr Asn Phe
 385 390 395 400
 Ser Glu Phe Glu Asn Asn Lys Glu Ile His Val Val Ser Phe Arg Gly
 405 410 415
 Val Tyr Leu Trp Asn Asp Glu Gln Ser Tyr Lys Gly Asp Ile Pro Asn
 420 425 430
 Ser Asn Lys Gly Ile Leu Thr Val Tyr Arg Met Phe Arg Pro Ile Gly
 435 440 445
 His Thr His Ile Asn Thr His Lys Lys Leu His Phe Ile Ala Thr Pro
 450 455 460
 Tyr Phe Thr Asn Thr Trp Gln Ser Asn Ile Leu Phe Lys Asp Tyr Gly

465 470 475 480
 Ser Met Lys Glu Asn Asp Arg Ile Arg Lys Tyr Glu Arg Tyr Ile Gln
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 Glu Asp Gln Gln Lys Asp Met Ser Ser Gly Tyr Asp Tyr Leu Leu Asn
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 Ser Glu Asn Leu Tyr Gln Leu Asp Lys Ile Glu Glu Tyr
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 20 25 30
 Thr Leu Leu Lys Asn Ser His Ser Leu Phe Phe Ser Val Phe Leu Ile
 35 40 45
 Ser Gln Lys Ala Tyr Ile Arg Ser Ser Val Ser Phe Gln Val Arg Cys
 50 55 60
 Arg Asp Arg Gln Gln Gly Ile Phe Val Ser
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 Glu Phe Ile Ser Ala Met Gly Asp Asn Thr Val Phe Ala Leu Tyr Gly
 35 40 45
 Lys Met Gly Ala Gly Lys Thr Phe Val Lys Ala Leu Cys Glu Glu
 50 55 60
 Leu Gly Val Ser Asp Val Ile Thr Ser Pro Thr Phe Ala Ile Val Asn
 65 70 75 80
 Glu Tyr Arg Ser Asp Glu Asn Gly Glu Leu Ile Tyr His Phe Asp Phe
 85 90 95
 Tyr Arg Ile Lys Lys Leu Ser Glu Val Tyr Asp Met Gly Tyr Glu Asp
 100 105 110
 Tyr Phe Tyr Ser Gly Ala Leu Cys Phe Ile Glu Trp Pro Glu Leu Val
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 Glu Glu Leu Leu Pro Gly Asp Ala Val Lys Val Thr Ile Glu Glu Leu
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 Glu Asp Gly Thr Arg Lys Ile Val Ile Asn Asp
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Leu Arg Asn Phe Glu Gly Asp Ala Thr Thr Pro Ser Ala Val Tyr Phe			
35	40	45	
Glu Asp Met Asp His Val Val Val Gly Lys Glu Ala Lys Gly Met Leu			
50	55	60	
Ala Thr Glu Pro Thr Lys Thr Ala Val Phe Ile Lys Arg His Ile Gly			
65	70	75	80
Val Asp Asp Ser Phe Asp Lys Asn Thr Asn Glu Phe Pro Tyr His Tyr			
85	90	95	
Asp Pro Thr Glu Ile Ser Ala Phe Ile Leu Lys Lys Leu Val Lys Asp			
100	105	110	
Ala Asn Asp Leu Gly Asp Asn Pro Glu Pro Ile Lys Asp Val Val Ile			
115	120	125	
Thr Cys Pro Ala Tyr Phe Gly Thr Lys Glu Arg Met Gln Thr Lys Gln			
130	135	140	
Ala Gly Glu Ile Ala Gly Leu Asn Val Leu Ser Ile Ile Asn Glu Pro			
145	150	155	160
Thr Ala Ala Ala Ile Ser Tyr Gly Val Lys Thr Asp Gln Lys Lys Thr			
165	170	175	
Val Leu Val Tyr Asp Leu Gly Gly Gly Thr Phe Asp Val Thr Leu Ile			
180	185	190	
Asn Val Asn Gly Gly Ala Ile Lys Val Ile Ala Thr Gly Gly Asp His			
195	200	205	
His Leu Gly Gly Val Asp Trp Asp Thr Ala Leu Ala Glu Tyr Met Leu			
210	215	220	
Ala Ala Phe Asn Glu Gln Asn Asn Thr Ser Tyr Ser Phe Glu Asp Arg			
225	230	235	240
Leu Asp Leu Lys Tyr Glu Leu Leu Leu Leu Ala Glu Asp Lys Lys Lys			
245	250	255	
Val Leu Thr Ala Lys Gln Thr Ala Lys Ala Thr Tyr Gln Tyr Glu Gly			
260	265	270	
Asn Ser Ala Arg Ile Glu Ile Ser Arg Glu Leu Phe Asn Ser Leu Thr			
275	280	285	
Glu Arg Lys Leu Asp Glu Thr Ile Asp Ala Thr Lys Lys Val Ile Ala			
290	295	300	
Ile Ala Lys Glu Lys Gly Tyr Asn Asn Ile Asp Glu Ile Leu Leu Val			
305	310	315	320
Gly Gly Ser Ser Arg Met Pro Gln Ile Lys Glu Arg Val Asp Lys Glu			
325	330	335	
Phe Asn Cys Asp Ala Lys Leu Thr Asp Pro Asp Glu Cys Val Ala Lys			
340	345	350	
Gly Ala Ala Ile Tyr Ala Met Asn Ala Ala Tyr Ser Gln Ala Val Arg			
355	360	365	
Asp Tyr Glu Glu Gly Glu Ser Asp Asp Lys Pro Ala Pro Leu Arg Gly			
370	375	380	
Asp Arg Thr Thr Val Val Asn Val Thr Ser Lys Thr Tyr Gly Thr Asp			
385	390	395	400
Val Ile Ile Glu Gly Gln Ser Met Val Gln Asn Leu Ile Phe Ala Asn			
405	410	415	
Ser Ser Leu Pro Thr Lys Arg Ile Glu Thr Phe Thr Thr Ser Ile Pro			
420	425	430	
Asn Gln Arg Gly Val Ser Val Lys Val Phe Glu Ser Asp Phe Thr Asn			
435	440	445	
Met Glu Thr Glu Ser Ile Val Glu Glu Arg Phe Cys Thr Leu Ile Asp			
450	455	460	
Asp His Thr Leu Lys Leu Ser Lys Asp Trp Pro Gln Gly Thr Gln Ile			
465	470	475	480

Ser Val Thr Tyr Gln Ile Asp Gln Glu Gly Ile Leu His Gly Leu Ala
 485 490 495
 Tyr Val Glu Asn Asp Lys Leu Glu Phe Asp Leu Lys Ile Thr Gly Val
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 Lys Cys Glu Glu Leu Arg Lys Ser Lys Ala Ile Ile Asp Lys Ala
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 Ser Val Glu
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 Phe Arg Ile Arg Ala Ile Ser Ile Phe Asn Pro Ser Ala Asn Asn Cys
 35 40 45
 Tyr His His Ala Leu Cys Lys Arg His Lys Asn Pro Val Asn Asn Lys
 50 55 60
 Pro Met Lys Thr Phe Lys Arg Phe Leu Phe Ile Cys Ile Gly Leu Phe
 65 70 75 80
 Ile Ile Val Leu Ser Thr Gln Ala Leu Glu Lys Tyr Glu Val Thr Ala
 85 90 95
 Asn Thr Phe Leu Asn Ile Arg Ser His Gly Ser Thr Asn Ala Pro Val
 100 105 110
 Ile Gly Thr Ile Asn His Gly Gly Ile Val Asn Val Glu Ser Ile Asp
 115 120 125
 Gly Glu Trp Ala Lys Val Ser Phe Asn Gly Gly Tyr Gly Tyr Val Ser
 130 135 140
 Thr Thr Tyr Ile Arg Pro Val Thr Pro Thr Pro Pro Ala Lys Ala Pro
 145 150 155 160
 Thr Asn Thr Leu Ser Asp Trp Phe Arg Gln Thr Asn Tyr Asp Cys Arg
 165 170 175
 Pro Leu Val Tyr Ile Ile Leu Gly Leu Ser Ile Val Leu Phe Ile Leu
 180 185 190
 Arg Met Arg Arg Gly Glu Ser Thr Pro Leu Glu Asp Ser Glu His Thr
 195 200 205
 Ile Asn Leu Ser Leu Phe Ile Thr Val Cys Leu Leu Glu Leu Phe Tyr
 210 215 220
 Val Phe Ser Met Gly Ala Asn Ser Ile Trp Phe Cys Thr Pro Asp Lys
 225 230 235 240
 Ile Gly Trp Leu Trp Thr Ile Ile Asn Phe Phe Ile Phe Gly Ala Val
 245 250 255
 Val Phe Asn Gln Trp Met Cys Phe Phe Asn Thr Leu Asn Asp Val Gln
 260 265 270
 Tyr Asn Ser Tyr Ala Thr Phe Asn Trp Thr Trp Gly Ile Tyr Thr Trp
 275 280 285
 Gly Ile Cys Ile Ile Gly Ala Ile Ile Cys Gly Phe Phe Phe Val Gly
 290 295 300
 Phe Leu Pro Val Val Gly Ile Gly Phe Leu Val Gly Gln Ser Val Gln
 305 310 315 320
 Thr Gly Ile Ile Phe Asn Lys Val Leu Pro Lys Gly Gly Trp Lys His
 325 330 335
 Ala Cys Ile Cys Thr Leu Thr Tyr Leu Ile Gly Ser Thr Ala Thr Val
 340 345 350

Leu Ile Val Ala His Phe Leu Ile Leu Leu Leu Ile Val Leu Ile Ala
 355 360 365
 Leu Phe Leu Leu Ser Leu Leu Gly Lys Ser Ser Ser Ser Ser Gly Gly
 370 375 380
 Lys Arg Cys Ser Asn Cys Ser His Leu Ser Gly Ser Ser Cys Asn Leu
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 Ser Gly Arg Tyr Ile Ser Ser Pro Ser Thr Thr Tyr Cys Asp Asn Tyr
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 Gln

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 Leu Arg Asp Cys Trp Arg Lys Gln Lys Lys Pro Ser Asn Gly Ile Arg
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 Thr Cys Leu Glu Thr Ile Ile Ile Trp Lys Cys Ser Ala Ile Lys Arg
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 Gln Gly Leu Lys Pro Asn His Glu Ala Tyr Pro Leu Gln Val Asn Val
 35 40 45
 Asn Lys His Leu Ile Glu Tyr Ser Lys Lys Tyr Asn Val Lys Leu Ile
 50 55 60
 Cys Thr Asn Asp Val His Phe Val Asn Glu Glu His Ala Glu Ala His
 65 70 75 80
 Asp Arg Leu Ile Cys Leu Ser Thr Gly Lys Asp Leu Asp Asp Pro Asn
 85 90 95
 Arg Met Tyr Tyr Thr Lys Gln Glu Trp Met Lys Thr Lys Ala Glu Met
 100 105 110
 Asn Glu Leu Phe Ala Asp Val Pro Glu Ala Leu Ser Asn Thr Leu Glu
 115 120 125
 Ile Leu Asp Lys Val Glu Tyr Tyr Ser Ile Asp His Ala Pro Ile Met
 130 135 140
 Pro Thr Phe Ala Ile Pro Glu Asp Phe Gly Thr Glu Glu Gly Tyr Arg
 145 150 155 160
 Gln Lys Tyr Thr Glu Lys Asp Leu Phe Asp Glu Phe Thr Gln Asp Glu
 165 170 175
 Asn Gly Asn Val Leu Ser Glu Glu Ala Ala Lys Asp Lys Ile Lys
 180 185 190
 Arg Leu Gly Gly Tyr Asp Lys Leu Tyr Arg Ile Lys Leu Glu Ala Asp
 195 200 205
 Tyr Leu Lys Lys Leu Thr Phe Asp Gly Ala Lys Lys Phe Tyr Gly Asp
 210 215 220
 Pro Leu Ser Pro Glu Val Lys Glu Arg Leu Val Phe Glu Leu His Ile
 225 230 235 240
 Met Lys Thr Met Gly Phe Pro Gly Tyr Phe Leu Ile Val Gln Asp Phe
 245 250 255
 Ile Ala Ala Gly Arg Asn Met Gly Val Ser Ile Gly Pro Gly Arg Gly
 260 265 270
 Ser Ala Ala Gly Ser Ala Val Ala Tyr Cys Leu Gln Ile Thr Lys Ile
 275 280 285
 Asp Pro Ile Lys Tyr Asp Leu Leu Phe Glu Arg Phe Leu Asn Pro Asp
 290 295 300
 Arg Ile Ser Leu Pro Asp Ile Asp Ile Asp Phe Asp Asp Asp Gly Arg
 305 310 315 320
 Gly Glu Val Leu Arg Trp Val Thr Glu Lys Tyr Gly Gln Glu Lys Val
 325 330 335

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Ala His Ile Ile Thr Tyr Gly Thr Met Ala Thr Lys Leu Ala Ile Lys
 340 345 350
 Asp Val Ala Arg Val Gln Lys Leu Pro Leu Ala Glu Ser Asp Arg Leu
 355 360 365
 Ala Lys Leu Val Pro Asp Lys Ile Pro Asp Lys Lys Leu Asn Leu Lys
 370 375 380
 Asn Ala Ile Glu Tyr Val Pro Glu Leu Gln Ala Ala Glu Ala Ser Pro
 385 390 395 400
 Asp Pro Leu Val Arg Asp Thr Met Lys Tyr Ala Lys Met Leu Glu Gly
 405 410 415
 Asn Val Arg Gly Thr Gly Val His Ala Cys Gly Thr Ile Ile Cys Arg
 420 425 430
 Asp Asp Ile Thr Asp Trp Val Pro Val Ser Thr Ala Asp Asp Lys Glu
 435 440 445
 Thr Gly Glu Lys Met Leu Val Thr Gln Tyr Glu Gly Ser Val Ile Glu
 450 455 460
 Asp Thr Gly Leu Ile Lys Met Asp Phe Leu Gly Leu Lys Thr Leu Ser
 465 470 475 480
 Ile Ile Lys Glu Ala Val Glu Asn Ile Arg Leu Ser Lys Gly Met Glu
 485 490 495
 Leu Asp Ile Asp Ser Ile Ser Ile Glu Asp Pro Ala Thr Tyr Lys Leu
 500 505 510
 Tyr Ser Asp Gly Arg Thr Ile Gly Thr Phe Gln Phe Glu Ser Ala Gly
 515 520 525
 Met Gln Lys Tyr Leu Arg Glu Leu Gln Pro Ser Thr Phe Glu Asp Leu
 530 535 540
 Ile Ala Met Asn Ala Leu Tyr Arg Pro Gly Pro Met Asp Tyr Ile Pro
 545 550 555 560
 Asp Phe Ile Asp Arg Lys His Gly Arg Lys Pro Ile Glu Tyr Asp Ile
 565 570 575
 Pro Val Met Glu Lys Tyr Leu Lys Asp Thr Tyr Gly Ile Thr Val Tyr
 580 585 590
 Gln Glu Gln Val Met Leu Leu Ser Arg Leu Leu Ala Asp Phe Thr Arg
 595 600 605
 Gly Glu Ser Asp Ala Leu Arg Lys Ala Met Gly Lys Lys Leu Arg Asp
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 Lys Leu Asp His Met Lys Pro Lys Phe Val Glu Gly Gly Arg Lys Asn
 625 630 635 640
 Gly His Asp Pro Lys Val Leu Glu Lys Ile Trp Ala Asp Trp Glu Lys
 645 650 655
 Phe Ala Ser Tyr Ala Phe Asn Lys Ser His Ala Thr Cys Tyr Ser Trp
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 Val Ala Tyr Gln Thr Ala Tyr Leu Lys Ala Asn Tyr Pro Ala Glu Tyr
 675 680 685
 Met Ala Ala Val Met Ser Arg Ser Leu Ser Asn Ile Thr Asp Ile Thr
 690 695 700
 Lys Leu Met Asp Glu Cys Lys Met Met Gly Val Gln Thr Leu Gly Pro
 705 710 715 720
 Asp Val Asn Glu Ser Asn Leu Lys Phe Thr Val Asn Arg Asn Gly Asn
 725 730 735
 Ile Arg Phe Gly Leu Gly Ala Val Lys Gly Val Gly Glu Ala Ala Val
 740 745 750
 Gln Ser Ile Met Glu Glu Arg Lys Glu Asn Gly Pro Phe Lys Gly Ile
 755 760 765
 Phe Asp Phe Val Gln Arg Val Asn Leu Asn Ala Cys Asn Lys Lys Asn
 770 775 780
 Met Glu Cys Leu Ala Leu Ala Gly Gly Phe Asp Ser Phe Pro Glu Leu
 785 790 795 800
 Lys Arg Glu Gln Tyr Phe Ala Val Asn Ser Lys Gly Glu Thr Phe Leu

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<211> 273
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Leu	Leu	Gly	Ser	Leu	Leu	Ala	Ser	Ile	Ala	Cys	Gly	Ile	Ile	Gly	Thr
			20					25					30		
Tyr	Ile	Val	Thr	Arg	Arg	Leu	Val	Phe	Ile	Ser	Gly	Gly	Ile	Thr	His
			35				40					45			
Ala	Ser	Phe	Gly	Gly	Ile	Gly	Leu	Gly	Leu	Tyr	Ala	Gly	Ile	Ser	Pro
			50			55					60				
Ile	Leu	Ser	Ala	Ala	Val	Phe	Ser	Val	Leu	Ser	Ala	Phe	Gly	Val	Glu
65					70					75					80
Trp	Leu	Ser	Lys	Arg	Lys	Asp	Met	Arg	Glu	Asp	Ser	Ala	Ile	Ala	Met
				85					90					95	
Phe	Trp	Thr	Leu	Gly	Met	Ala	Leu	Gly	Ile	Met	Phe	Ser	Phe	Leu	Ser
			100					105					110		
Pro	Gly	Phe	Ala	Pro	Asp	Leu	Ser	Ala	Tyr	Leu	Phe	Gly	Asn	Ile	Leu
			115				120					125			
Thr	Ile	Thr	Gln	Thr	Asp	Leu	Leu	Leu	Leu	Gly	Ile	Leu	Ala	Ile	Leu
			130			135					140				
Leu	Ile	Leu	Phe	Phe	Thr	Leu	Phe	Ile	His	Pro	Ile	Ile	Tyr	Val	Ala

145 150 155 160
 Phe Asp Arg Glu Phe Ala Arg Ser Gln Gly Ile Pro Val Val Val Leu
 165 170 175
 Glu Tyr Ile Leu Met Met Phe Ile Ala Leu Thr Ile Val Ser Cys Leu
 180 185 190
 Arg Met Val Gly Ile Val Leu Ala Ile Ser Leu Leu Thr Ile Pro Gln
 195 200 205
 Met Thr Ala Asn Leu Phe Thr Asn Lys Phe Lys Arg Ile Ile Trp Leu
 210 215 220
 Ser Ile Ala Ile Gly Tyr Leu Ser Cys Leu Gly Gly Leu Leu Ile Ser
 225 230 235 240
 Tyr Arg Leu Asn Val Pro Ser Gly Ala Ser Ile Ile Phe Phe Ser Ile
 245 250 255
 Leu Ile Tyr Ile Ala Cys Lys Ile Gly Lys Ser Leu Phe Arg Lys Lys
 260 265 270
 Gln

<210> 8441
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 <212> PRT
 <213> B.fragilis

<400> 8441
 Glu Ser Thr Arg Ile Pro Ser Ser Lys Arg Val Leu Ala Phe Pro Ala
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 Arg Met Cys Ala Ser Ala Ser Ser Arg Tyr Ile Thr Ala Ile Ser Ile
 20 25 30
 Phe Ser Cys Asp Ser Ser Ile Ile Val Phe Thr Ser Thr Ile Leu Leu
 35 40 45
 Ser Ile Tyr Lys Ile Gly Thr Leu Ile His Phe Glu Asn Lys Ser Arg
 50 55 60
 Leu Phe Phe Asp Tyr Leu Gln Leu Ser Ile Glu Arg Asn Ala Leu Pro
 65 70 75 80
 Asp Val Ser Leu Ser Lys
 85

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 <213> B.fragilis

<400> 8442
 Gly Val Arg Arg Met Leu Asp Asp Ser Tyr Phe Met Lys Gln Ala Leu
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 Ile Glu Ala Val Lys Ala Gly Glu Arg Gly Glu Val Pro Val Gly Ala
 20 25 30
 Val Val Val Cys Lys Glu Arg Ile Ile Ala Arg Ala His Asn Leu Thr
 35 40 45
 Glu Thr Leu Asn Asp Val Thr Ala His Ala Glu Met Gln Ala Ile Thr
 50 55 60
 Ala Ala Ala Asn Val Leu Gly Gly Lys Tyr Leu Asn Glu Cys Thr Leu
 65 70 75 80
 Tyr Val Thr Val Glu Pro Cys Val Met Cys Ala Gly Ala Ile Ala Trp
 85 90 95
 Ala Gln Thr Gly Lys Leu Val Phe Gly Ala Glu Asp Asp Lys Arg Gly
 100 105 110
 Tyr Gln Arg Tyr Ala Pro Gln Ala Leu His Pro Lys Thr Val Val Val
 115 120 125

Lys Gly Ile Leu Ala Asp Glu Cys Ala Gly Leu Met Lys Asp Phe Phe
 130 135 140
 Ala Ala Lys Arg Arg
 145

<210> 8443

<211> 430

<212> PRT

<213> B.fragilis

<400> 8443

Arg Ala Gly Ser Ser Ala Asn Ser Asn Gln Glu Gly Arg Gly Cys Met
 1 5 10 15
 Arg Ser Ser Arg Trp Phe Ile Ile Gly Ile Val Leu Phe Leu Ile
 20 25 30
 Met Phe Val Val Glu Ser His Leu Pro Lys Lys Phe Val Trp Asn Pro
 35 40 45
 Thr Phe Ala Gln His Asp His Gln Pro Leu Gly Cys Ala Val Phe Asp
 50 55 60
 Asp Val Leu Lys Ser Ser Leu Pro Asp Gly Tyr Ser Leu Ser Arg Lys
 65 70 75 80
 Thr Phe Tyr Gln Phe Ala Ala Asp Ser Asp Ser Cys Gln Ser Ile Leu
 85 90 95
 Val Ile Thr Gln His Val Asn Leu Val Glu Ala Asp Leu Asn Ala Leu
 100 105 110
 Leu Asp Leu Ala Gln Arg Gly Asn Lys Ile Leu Ile Ala Ala Ser Ser
 115 120 125
 Phe Ser Thr Ser Leu Ser Asp Thr Leu Gly Phe Asp Asn Ser Tyr Ala
 130 135 140
 Tyr Phe Asn Pro Arg Arg Met Lys Glu Tyr Ala Gly Asn Leu Leu Glu
 145 150 155 160
 Arg Asp Ser Val Cys Trp Ile Gly Asp Ser Ala Val Tyr Asp Lys Arg
 165 170 175
 Thr Phe Arg Phe Tyr Pro His Leu Cys Gly Ile Tyr Phe Thr Lys Tyr
 180 185 190
 Asp Ser Leu Ser Leu Pro Leu Ala Thr Lys Arg Ile Asp Ser Met Gln
 195 200 205
 Met Phe Asn Asp Ser Leu Pro Asp Cys Phe Pro Pro Val Ala Leu Ser
 210 215 220
 Arg Pro Val Gly Ser Gly Glu Ile Val Leu Val Thr Thr Pro Leu Leu
 225 230 235 240
 Phe Thr Asn Tyr Gly Met Leu Asp Gly Asp Asn Ala Ala Tyr Leu Phe
 245 250 255
 Arg Leu Leu Ser His Leu Lys Gly Leu Pro Val Val Arg Thr Glu Ala
 260 265 270
 Tyr Gly Ala Gly Ala Gln Val Glu Val Ser Pro Phe Arg Tyr Phe Leu
 275 280 285
 Ser Gln Arg Pro Leu Arg Trp Ala Leu Tyr Leu Thr Met Leu Val Leu
 290 295 300
 Val Leu Phe Met Val Phe Thr Ala Arg Arg Arg Gln Arg Ala Ile Pro
 305 310 315 320
 Val Ile Arg Glu Pro Ala Asn Arg Asn Leu Glu Phe Ala Glu Leu Ile
 325 330 335
 Gly Thr Leu Tyr Tyr Gln Lys Lys Asn His Ala Asp Leu Val Arg Lys
 340 345 350
 Lys Phe Ile Tyr Phe Asp Glu Ser Leu Arg Arg Asn Ile Gln Val Asp
 355 360 365
 Val Glu Asp Asp Ser Asp Asp Asn Ala Leu Ser Arg Arg Ile Ser Arg
 370 375 380

Lys Thr Gly Thr Asp Glu Glu Lys Val Arg Asn Leu Phe Arg Lys Leu
 385 390 395 400
 Arg Pro Val Ile Arg Gly Gln Gln Glu Val Gly Glu Thr Leu Met Lys
 405 410 415
 Asp Leu Ile Asp Gly Met Asn Glu Ile Glu Lys Pro Gln Pro
 420 425 430

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 <211> 88
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<400> 8444
 Asn Tyr Arg Ser Lys Ser Lys Phe Ala Lys Asn Met Arg Lys Arg Asp
 1 5 10 15
 Lys Lys Cys Asn Lys Ala Thr Pro Asp Glu Pro Lys Arg Glu Arg Arg
 20 25 30
 Met Ser Ile Leu Leu Ser Glu Asp Glu Gln Gln Ile Val Asp Arg Tyr
 35 40 45
 Leu Asp Lys Tyr Lys Ile Thr Asn Lys Ser Arg Trp Leu Arg Glu Thr
 50 55 60
 Ile Leu Met Phe Ile His Lys Asn Met Glu Glu Asp Tyr Pro Thr Leu
 65 70 75 80
 Phe Gly Glu His Asp Met Arg Arg
 85

<210> 8445
 <211> 84
 <212> PRT
 <213> B.fragilis

<400> 8445
 Leu Gly Thr Arg Leu His Ala Val Glu Glu Leu Ala Ala Val Gln Glu
 1 5 10 15
 Ser Leu Gln Val Met Phe Thr Val Lys Val Ala Pro Ser Leu Leu Met
 20 25 30
 Phe Ser Lys Val Asp Trp Asp Asn Ser Ser Val Ala Ser Glu Val Glu
 35 40 45
 Ser Ser Gln Leu Leu Lys Pro Ile Ser Thr Lys Ser Ile Thr Asn Lys
 50 55 60
 Tyr Ser Val Phe Ile Lys Glu Cys Phe Phe Ile Lys Asn Thr Gly Ser
 65 70 75 80
 Lys Ile Met Val

<210> 8446
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 8446
 Arg Arg Gln Gly Asn Ser Pro Ala Asn Arg Tyr Ile Gly Lys Ala Leu
 1 5 10 15
 Leu Asn Glu Ser Glu Phe Thr Arg Asn Tyr Leu Thr His Arg Glu Leu
 20 25 30
 Thr Ser Gly Gly Glu Leu Val Leu Trp Met Asp Ser Val Pro Asp Ser
 35 40 45
 Arg Arg Gly Thr Gln Lys Glu Asp Leu Pro Tyr Ser Tyr Ser Asn Gly
 50 55 60

His
65

<210> 8447
<211> 92
<212> PRT
<213> B.fragilis

<400> 8447
Gly Thr Gly Gly Arg Asn Lys Lys Asn Ser Asp Gln Arg Leu Ile Ile
1 5 10 15
Arg Arg Met Ala Pro Gln Tyr Phe Val Gln Gly Ile Phe Ala Thr Ala
20 25 30
Gly Leu Ile Ala Leu Leu Ala Ser Ile Leu Asn Trp Asn Trp Phe Phe
35 40 45
Thr Ala Gln Asn Ala Gln Leu Ile Val Arg Asn Val Gly Arg Gly Arg
50 55 60
Ala Arg Leu Phe Tyr Gly Leu Leu Gly Val Ile Met Ile Gly Met Ala
65 70 75 80
Val Phe Phe Phe Leu Asn Thr Gln Pro Val Ser Glu
85 90

<210> 8448
<211> 311
<212> PRT
<213> B.fragilis

<400> 8448
Asn Met Lys Gly Leu Val Ile Lys Asn Thr Gly Ser Trp Tyr Gln Val
1 5 10 15
Lys Thr Asp Asp Gly Gln Leu Val Glu Cys Lys Ile Lys Gly Asn Phe
20 25 30
Arg Leu Lys Gly Ile Arg Ser Thr Asn Pro Val Ala Val Gly Asp Arg
35 40 45
Val Gln Ile Ile Leu Asn Gln Glu Gly Thr Ala Phe Ile Ser Glu Ile
50 55 60
Glu Asp Arg Lys Asn Tyr Ile Ile Arg Arg Ser Ser Asn Leu Ser Lys
65 70 75 80
Gln Ser His Ile Leu Ala Ala Asn Leu Asp Gln Cys Met Leu Val Val
85 90 95
Thr Val Asn Tyr Pro Glu Thr Ser Thr Thr Phe Ile Asp Arg Phe Leu
100 105 110
Ala Ser Ala Glu Ala Tyr Arg Val Pro Val Lys Ile Leu Phe Asn Lys
115 120 125
Val Asp Ala Tyr Asp Glu Asp Glu Leu His Tyr Leu Asp Ser Leu Ile
130 135 140
Thr Leu Tyr Thr Gln Ile Gly Tyr Pro Cys Phe Lys Ile Ser Ala Leu
145 150 155 160
Thr Gly Glu Gly Val Asp Ala Ile Arg Glu Glu Leu Lys Gly Arg Val
165 170 175
Thr Leu Phe Ser Gly His Ser Gly Val Gly Lys Ser Thr Leu Ile Asn
180 185 190
Ala Leu Val Pro Gly Leu Glu Val Lys Thr Ala Glu Ile Ser Ala Tyr
195 200 205
His Asn Lys Gly Met His Thr Thr Thr Phe Ser Glu Met Phe Pro Val
210 215 220
Pro Gly Asp Gly Tyr Ile Ile Asp Thr Pro Gly Ile Lys Gly Phe Gly
225 230 235 240
Thr Phe Asp Met Glu Glu Glu Glu Ile Gly His Tyr Phe Pro Glu Ile

				245					250					255			
Phe	Lys	Thr	Ser	Ala	Asn	Cys	Lys	Tyr	Gly	Asn	Cys	Thr	His	Arg	Gln		
			260					265					270				
Glu	Pro	Gly	Cys	Ala	Val	Arg	Lys	Ala	Val	Glu	Glu	His	Tyr	Ile	Ser		
		275					280					285					
Glu	Ser	Arg	Tyr	Thr	Ser	Tyr	Leu	Ser	Met	Leu	Glu	Asp	Lys	Glu	Glu		
	290					295					300						
Gly	Lys	Tyr	Arg	Ala	Ala	Tyr											
305					310												

<210> 8449

<211> 1065

<212> PRT

<213> B.fragilis

<400> 8449

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Ile	Ser	Gly	Met	Phe	Val	Leu	Leu	Ser	Gly	Met	Gly	Leu	Gln	Pro	Cys		
		20						25					30				
Leu	Ala	Ser	His	Ser	Tyr	Asn	Ala	Pro	Ala	Gly	Val	Val	Gln	Val			
		35				40					45						
Glu	Gln	Gln	Lys	Gln	Lys	Ile	Thr	Gly	Cys	Val	Leu	Asp	Val	Thr	Gly		
	50				55						60						
Ser	Pro	Leu	Pro	Gly	Ala	Ser	Val	Leu	Val	Lys	Gly	Ala	Pro	Gly	Arg		
65				70					75					80			
Gly	Ala	Ile	Thr	Asp	Met	Asp	Gly	Asn	Phe	Ser	Val	Glu	Ala	Glu	Gln		
				85				90						95			
Gly	Glu	Gln	Leu	Glu	Ile	Ser	Phe	Ile	Gly	Met	Glu	Thr	Gln	Val	Val		
			100				105						110				
Thr	Val	Ser	Ala	Lys	Thr	Arg	Leu	Gln	Ile	Thr	Leu	Lys	Glu	Asp	Ser		
		115				120						125					
Lys	Thr	Leu	Asp	Glu	Val	Val	Val	Gly	Tyr	Gly	Thr	Gln	Lys	Lys			
	130				135					140							
Ala	Asn	Leu	Thr	Gly	Ala	Val	Ala	Ser	Val	Ser	Ala	Glu	Thr	Leu	Glu		
145				150						155				160			
Ser	Arg	Pro	Ile	Thr	Asn	Leu	Ser	Gln	Gly	Leu	Gln	Pro	Pro	Ile	Gly		
			165					170						175			
Asn	Leu	Asn	Ile	Ser	Ala	Asp	Asn	Gly	Ala	Pro	Gly	Lys	Gly	Tyr	Gly		
		180						185					190				
Phe	Asn	Val	Arg	Gly	Thr	Thr	Ser	Ile	Asn	Ser	Ser	Gly	Pro	Leu	Val		
		195				200						205					
Leu	Val	Asp	Gly	Val	Gln	Met	Asp	Pro	Asn	Met	Ile	Asn	Pro	Ala	Asp		
	210				215						220						
Val	Glu	Ser	Val	Ser	Val	Leu	Lys	Asp	Ala	Ala	Ser	Ala	Ser	Ile	Tyr		
225					230					235				240			
Gly	Thr	Gln	Ala	Ala	Tyr	Gly	Val	Val	Leu	Ile	Thr	Thr	Lys	Lys	Gly		
			245					250					255				
Lys	Asp	Glu	Lys	Ala	Lys	Ile	Ser	Phe	Ser	Ser	Asn	Trp	Ser	Ile	Asn		
		260					265					270					
Ser	Pro	Thr	Arg	Lys	Pro	Glu	Tyr	Met	Asp	Ser	Trp	Thr	Phe	Ala	Asn		
	275					280						285					
Phe	His	Asn	Leu	Thr	Asn	Arg	Asn	Ser	Gly	Gly	Gly	Asp	Tyr	Tyr	Asp		
	290				295						300						
Lys	Asn	Tyr	Met	Asp	His	Ile	Tyr	Ala	Tyr	Tyr	Thr	Asp	Pro	Lys	His		
305					310				315					320			
Asn	Leu	Pro	Val	Phe	Ile	Asp	Pro	Ser	Asn	Pro	Asn	Lys	Tyr	Leu	Tyr		
			325					330					335				
Cys	Gly	Asn	Thr	Asp	Trp	Ile	Asp	Glu	Thr	Ile	Lys	Asp	Asn	Thr	Leu		

1999	1998	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1939	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928	1927	1926	1925	1924	1923	1922	1921	1920	1919	1918	1917	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907	1906	1905	1904	1903	1902	1901	1900	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876	1875	1874	1873	1872	1871	1870	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858	1857	1856	1855	1854	1853	1852	1851	1850	1849	1848	1847	1846	1845	1844	1843	1842	1841	1840	1839	1838	1837	1836	1835	1834	1833	1832	1831	1830	1829	1828	1827	1826	1825	1824	1823	1822	1821	1820	1819	1818	1817	1816	1815	1814	1813	1812	1811	1810	1809	1808	1807	1806	1805	1804	1803	1802	1801	1800	1799	1798	1797	1796	1795	1794	1793	1792	1791	1790	1789	1788	1787	1786	1785	1784	1783	1782	1781	1780	1779	1778	1777	1776	1775	1774	1773	1772	1771	1770	1769	1768	1767	1766	1765	1764	1763	1762	1761	1760	1759	1758	1757	1756	1755	1754	1753	1752	1751	1750	1749	1748	1747	1746	1745	1744	1743	1742	1741	1740	1739	1738	1737	1736	1735	1734	1733	1732	1731	1730	1729	1728	1727	1726	1725	1724	1723	1722	1721	1720	1719	1718	1717	1716	1715	1714	1713	1712	1711	1710	1709	1708	1707	1706	1705	1704	1703	1702	1701	1700	1699	1698	1697	1696	1695	1694	1693	1692	1691	1690	1689	1688	1687	1686	1685	1684	1683	1682	1681	1680	1679	1678	1677	1676	1675	1674	1673	1672	1671	1670	1669	1668	1667	1666	1665	1664	1663	1662	1661	1660	1659	1658	1657	1656	1655	1654	1653	1652	1651	1650	1649	1648	1647	1646	1645	1644	1643	1642	1641	1640	1639	1638	1637	1636	1635	1634	1633	1632	1631	1630	1629	1628	1627	1626	1625	1624	1623	1622	1621	1620	1619	1618	1617	1616	1615	1614	1613	1612	1611	1610	1609	1608	1607	1606	1605	1604	1603	1602	1601	1600	1599	1598	1597	1596	1595	1594	1593	1592	1591</
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Asp Tyr Gln Ala Glu Ile Thr Lys Phe Asn Asn Pro Gln Asn Leu Leu
 820 825 830
 Ser Thr His Tyr Val Gly Lys Lys Trp Gly Glu Ile Trp Gly Leu Val
 835 840 845
 Thr Glu Gly Leu Phe Gln Ser Ala Glu Glu Val Ser Ala His Ala Asp
 850 855 860
 Gln Ser Glu Ile Tyr Gly Gly Gly Trp Tyr Pro Gly Asp Val Lys Tyr
 865 870 875 880
 Lys Asp Leu Asn Gly Asp Gly Lys Ile Asn Lys Gly Lys Asn Thr Leu
 885 890 895
 Asp Asp Pro Gly Asp Gln Lys Ile Ile Gly Asn Ser Glu Pro Arg Tyr
 900 905 910
 Ser Tyr Gly Ile Lys Gly Gly Leu Gln Trp Arg Asp Phe Asp Phe Asp
 915 920 925
 Val Phe Phe Gln Gly Ile Gly Lys Lys Asp Val Val Leu Gly Gly Asn
 930 935 940
 Gln Phe Trp Gly Phe Gly Asn Glu Trp His Val Pro Phe Lys His Ala
 945 950 955 960
 Leu Asp Ser Trp Thr Glu Asp Asn Arg Asn Ala Tyr Phe Pro Arg Ser
 965 970 975
 Thr Tyr Asp Asn Val Thr Gly Asn Arg Glu Thr Gln Thr Arg Tyr Leu
 980 985 990
 Gln Asn Ala Tyr Leu Arg Leu Lys Ser Ile Thr Leu Gly Tyr Ser
 995 1000 1005
 Leu Pro Lys Ala Leu Leu Ala Lys Trp Lys Ile Asp His Val Arg Phe
 1010 1015 1020
 Tyr Val Ser Gly Gln Asn Leu Leu Thr Phe Asp His Leu Phe Asp Ile
 1025 1030 1035 1040
 Tyr Asp Pro Glu Thr Val Ser Leu Ser Thr Tyr Pro Leu Thr Lys Ser
 1045 1050 1055
 Val Ser Phe Gly Leu Asn Ile Thr Leu
 1060 1065

<210> 8450

<211> 143

<212> PRT

<213> B.fragilis

<400> 8450

Phe Val Ile Met Trp Ile Leu Ile Val Gly Leu Val Leu Leu Ala Ile
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 Val Ala Met Ile Ala Gly Tyr Ile Arg Asn Lys Arg Leu Gln Lys Lys
 20 25 30
 Ile Asp Asn Gly Glu Leu Asp Ser Phe Pro Glu Val Lys Glu Val Asp
 35 40 45
 Val Glu Cys Cys Gly Gln His Glu Val Cys Glu Arg Asp Ser Leu Leu
 50 55 60
 Ala Ala Val Ser Lys Gln Ile Glu Tyr Tyr Asp Asp Glu Glu Leu Asp
 65 70 75 80
 Thr Phe Ile Gly Arg Ala Pro Glu Asp Tyr Thr Pro Glu Glu Ala Asp
 85 90 95
 Lys Phe Arg Asp Val Phe Tyr Thr Met Gln Asp Thr Asp Val Ala Gly
 100 105 110
 Trp Val Arg Ser Leu Gln Leu Arg Gly Ile Ser Leu Pro Asp Glu Ile
 115 120 125
 Lys Asp Glu Val Phe Leu Val Val Gly Glu Arg Arg Ile His Pro
 130 135 140

<210> 8451

<211> 73
 <212> PRT
 <213> B.fragilis

<400> 8451

Trp	Ala	Asp	Tyr	Arg	Trp	Tyr	Val	Phe	Ser	Ala	Met	Gly	Phe	Tyr	Pro
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Val	Cys	Pro	Gly	Val	Pro	Glu	Tyr	Ala	Met	Gly	Ser	Pro	Leu	Phe	Pro
			20					25					30		
Lys	Leu	Thr	Leu	His	Leu	Pro	Gly	Arg	Lys	Glu	Leu	His	Cys	Glu	Gly
		35					40					45			
Gly	Lys	Ala	Ile	Ala	Arg	Arg	Thr	Gly	Ile	Ser	Gly	Lys	Pro	Cys	Ser
	50					55					60				
Met	Lys	Val	Asn	Leu	Pro	Val	Thr	Thr							
65						70									

<210> 8452
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 8452

Leu	Ile	Ala	Ile	Ser	Glu	Ile	Ser	Ile	Thr	His	Ser	Arg	Thr	Met	Ala
1				5					10					15	
Gly	Asn	Asn	Gln	Asn	Lys	Lys	Ala	Ala	Met	Lys	Lys	Tyr	Leu	Leu	Thr
			20					25					30		
Ile	Tyr	Lys	Leu	Leu	Leu	Lys	Tyr	Leu	Leu	Met	Leu	Ile	Cys	Ile	Val
		35					40					45			
Lys	Trp	Asp	Ser	Leu	Leu	Ile	Ser	Ile	Ile	Cys	Leu	Cys	Leu	Pro	Phe
	50					55					60				
Phe	Cys														
65															

<210> 8453
 <211> 240
 <212> PRT
 <213> B.fragilis

<400> 8453

Arg	Thr	Asp	Met	Val	Val	Thr	Lys	Ile	Lys	Ile	Ser	Ala	Met	Ile	Leu
1				5					10					15	
Thr	Cys	Met	Leu	Tyr	Asn	Ala	Leu	Asn	Thr	Cys	Ala	Arg	Ser	Val	Asp
			20					25					30		
Ile	Ser	His	Lys	Gly	Cys	Lys	Tyr	Ser	Ile	Asp	Leu	Pro	Ser	Gly	Trp
		35					40					45			
Asp	Thr	Ile	Pro	His	Asp	Thr	Leu	Lys	Lys	Ile	Phe	Pro	Arg	Leu	Asp
	50					55					60				
Leu	Asp	Met	Gly	Leu	Tyr	Pro	Val	Ser	Gln	Lys	Glu	Tyr	Phe	Thr	Gly
65					70					75				80	
Asn	Tyr	Ala	Leu	Val	Gly	Phe	Met	Pro	Val	Leu	Gln	Ser	Leu	His	Ser
			85						90					95	
Tyr	Ser	Phe	Asp	Arg	Ile	Val	Ser	Asp	Met	Lys	Glu	Met	Asn	Asp	Arg
			100					105					110		
Thr	Lys	Asn	Thr	Trp	Asn	Asn	Asp	Ser	Ile	Ser	Thr	Arg	Leu	Asp	Ser
		115					120					125			
Ile	Val	Pro	Val	Asn	Ser	Ser	Pro	Asn	Tyr	Arg	Ile	Asn	Asn	Tyr	Leu
	130					135					140				
Thr	Ile	Arg	Arg	Asp	Ser	Ile	Leu	Leu	Lys	Gly	Cys	Gln	Ser	Leu	Tyr
145					150					155					160

Val Ser Lys Phe Gly Tyr Ile Thr Leu Met Leu Tyr Gln Lys Gly Asn
 165 170 175
 Asp Ala Leu Pro Ile Asp Ser Leu Leu Gly Lys Phe Asn Asp Ser Gly
 180 185 190
 Cys Leu Lys Val Asp Gln Glu Tyr Arg Tyr Thr Pro Pro Gln Lys Glu
 195 200 205
 Gly Leu Ser Phe Thr His Phe Leu Tyr Ala Leu Gly Ile Gly Gly Ile
 210 215 220
 Val Tyr Leu Leu Ile Ala Phe Phe Pro Lys Arg Lys Thr Asn Arg Gln
 225 230 235 240

<210> 8454
 <211> 451
 <212> PRT
 <213> B.fragilis

<400> 8454

Thr Ile Ile Phe Asp Pro Val Phe Phe Ile Lys Lys His Ser Phe Met
 1 5 10 15
 Lys Thr Glu Tyr Leu Phe Val Ile Leu Leu Val Leu Ile Gly Phe Ser
 20 25 30
 Ser Cys Glu Asp Ser Thr Ser Asp Ala Thr Leu Glu Leu Ser Gln Ser
 35 40 45
 Thr Phe Glu Asn Ile Ser Ser Asp Gly Ala Thr Leu Thr Val Asn Ile
 50 55 60
 Thr Cys Ser Asp Ser Trp Thr Ala Ala Ser Ser Thr Ala Cys Asn
 65 70 75 80
 Leu Val Pro Asn Gln Gly Thr Ser Asn Gln Ser Leu Ser Ile Val Val
 85 90 95
 Glu Ala Asn Leu Asp Glu Ala Glu Arg Asn Met Thr Val Val Val Thr
 100 105 110
 Ser Gly Gly Ile Lys Lys Thr Ile Ser Ile Ser Gln Gln Gly Arg Ser
 115 120 125
 Thr Thr Ala Gly Glu Tyr His Tyr Asn Leu Pro Val Ile Phe His Val
 130 135 140
 Leu Tyr Lys Asp Lys Asn Asn Pro Leu Gln Tyr Val Lys Gln Asp Arg
 145 150 155 160
 Leu Ala Lys Ile Leu Asp Thr Val Asn Lys Leu Tyr Lys Asp Lys Thr
 165 170 175
 Lys Ser Val Asp Met Asn Leu Thr Phe Thr Leu Ala Thr Thr Asp Glu
 180 185 190
 Asp Gly Lys Pro Leu Ser Thr Pro Gly Val Lys Tyr Val Leu Trp Glu
 195 200 205
 Glu Ser Tyr Pro Ile Asp Cys Asp Val Phe Met Asn Asp Glu Thr Gly
 210 215 220
 Lys Tyr Val Lys Tyr Ile Trp Glu Pro Asn Asn Tyr Ile Asn Val Met
 225 230 235 240
 Val Tyr Asn Phe Lys Asp Asp Glu Ser Thr Asn Ser Thr Thr Leu Gly
 245 250 255
 Ile Ala His Ile Pro Phe Ser Thr Val Gly Ser Asn Tyr Leu Glu Gly
 260 265 270
 Leu Ser Lys Thr Gln Lys Ser Tyr Leu Glu Lys Gln Asn Leu Lys Phe
 275 280 285
 Pro Tyr Ser Val Ser Ile Asn Ser Leu Phe Ile Asn Asp Gln Ser Thr
 290 295 300
 Ser Thr Gln Tyr Ser Thr Ala Asp Ile Thr Val Thr Leu Ala His Glu
 305 310 315 320
 Leu Gly His Tyr Leu Gly Leu His His Ala Phe Ser Glu Asn Asp Glu
 325 330 335

4604 8454 451 PRT B.fragilis

Gly Ile Tyr Asp Gly Cys Phe Asp Ser Asp Tyr Cys Asp Asp Thr Pro
 340 345 350
 Thr Tyr Asn Lys Val Glu Tyr Asp Ala Asp Tyr Ala Tyr Thr Ala Lys
 355 360 365
 Asn Asp Pro Ala Asn Phe Thr Phe Asp Tyr Leu Val Lys Arg Glu Asn
 370 375 380
 Cys Lys Thr Asn Gln Thr Phe Thr Ser Thr Asn Ile Met Asp Tyr Ser
 385 390 395 400
 Val Ser Tyr Ser Asp Arg Phe Thr Asn Asp Gln Arg Ser Arg Ile Arg
 405 410 415
 His Val Leu Thr Tyr Ser Pro Leu Ile Pro Gly Pro Lys Gln Gly Gln
 420 425 430
 Thr Gln Thr Arg Ser Val Val Glu Gly Pro Ile Asp Leu Pro Ile Arg
 435 440 445
 Thr Ala Arg
 450

<210> 8455

<211> 339

<212> PRT

<213> B.fragilis

<400> 8455

Asn Arg Asn Ile Pro Ile Met Lys Arg Lys His Leu Ile Thr Val Leu
 1 5 10 15
 Met Trp Cys Val Ala Thr Thr Leu Cys Ala Gln Thr Pro Val Glu Lys
 20 25 30
 Gly Leu Lys Ser Ile Asn Arg Gln Ala Thr Glu Ala Tyr Ile Gly Phe
 35 40 45
 Leu Ala Asp Asp Glu Leu Gln Gly Arg Glu Ala Gly Phe His Gly Ser
 50 55 60
 Arg Val Ala Ala Arg Tyr Ile Ala Ser Leu Leu Lys Glu Met Gly Ile
 65 70 75 80
 Arg Pro Leu Gly Glu Ser Tyr Tyr Gln Pro Phe Asp Ala Tyr Arg Lys
 85 90 95
 Glu Arg Gln Gln Lys Gly Arg Leu Glu Val His Pro Asp Ser Ile Ala
 100 105 110
 Lys Leu Lys Gln Val Val His Gln Lys Leu Ser Met Asn Asn Val Leu
 115 120 125
 Gly Met Ile Pro Gly Lys Lys Thr Asn Glu Tyr Val Ile Val Gly Ala
 130 135 140
 His Phe Asp His Leu Gly Ile Asp Pro Ala Leu Asp Gly Asp Gln Ile
 145 150 155 160
 Tyr Asn Gly Ala Asp Asp Asn Ala Ser Gly Val Ser Ala Val Leu Gln
 165 170 175
 Ile Ala Lys Ala Phe Val Val Ser Gly Gln Gln Pro Glu Arg Asn Val
 180 185 190
 Ile Phe Ala Phe Trp Asp Gly Glu Glu Lys Gly Leu Leu Gly Ser Lys
 195 200 205
 Tyr Phe Val Gln Glu Cys Pro Phe Ile Asn Gln Val Lys Gly Tyr Leu
 210 215 220
 Asn Phe Asp Met Ile Gly Arg Asn Asn Gln Pro Gln Asn Pro Lys His
 225 230 235 240
 Val Val Tyr Phe Tyr Thr Glu Ala Asn Pro Ala Phe Gly Arg Trp Leu
 245 250 255
 Lys Glu Asp Ile Lys Lys Tyr Gly Leu Gln Leu Glu Pro Asn Tyr Arg
 260 265 270
 Pro Trp Asp Lys Pro Val Gly Val Ser Asp Asn Gly Ser Phe Ala Lys
 275 280 285

Ala Gly Ile Pro Ile Ile Trp Tyr His Thr Asp Gly His Pro Asp Tyr
 290 295 300
 His Gln Pro Ser Asp His Ala Asp Arg Leu Asn Trp Asp Lys Val Val
 305 310 315 320
 Glu Ile Ser Lys Ala Ser Phe Leu Asn Val Trp Asn Leu Ala Asn Glu
 325 330 335
 Lys Asp Tyr

<210> 8456
 <211> 239
 <212> PRT
 <213> B.fragilis

<400> 8456
 Glu Thr Ile Met Ala Asn Ala Ile Thr Arg His Ile Pro Asn Thr Val
 1 5 10 15
 Thr Cys Leu Asn Leu Phe Ser Gly Cys Ile Ala Gly Val Met Ala Phe
 20 25 30
 Glu Ala Lys Tyr Glu Leu Ala Phe Ile Phe Ile Ile Leu Ser Ala Val
 35 40 45
 Phe Asp Phe Phe Asp Gly Met Leu Ala Arg Leu Leu His Ala Tyr Ser
 50 55 60
 Pro Ile Gly Lys Glu Leu Asp Ser Leu Ala Asp Asp Val Ser Phe Gly
 65 70 75 80
 Val Ala Pro Ser Leu Leu Val Phe Ser Phe Leu Lys Glu Pro Gly Leu
 85 90 95
 Ile Tyr Pro Asp Phe Leu Ala Gly Leu Arg Asp Tyr Ile Pro Tyr Leu
 100 105 110
 Ala Phe Leu Ile Ser Ile Phe Ser Ala Leu Arg Leu Ala Asn Phe Asn
 115 120 125
 Val Asp Glu Arg Gln Thr Ser Ser Phe Ile Gly Leu Pro Val Pro Ala
 130 135 140
 Asn Ala Leu Tyr Trp Gly Ala Leu Ile Val Gly Gly Lys Asp Phe Leu
 145 150 155 160
 Leu Ala His Cys Asn Val Ile Tyr Leu Ile Ile Met Val Met Leu Phe
 165 170 175
 Ser Trp Leu Leu Val Ala Glu Ile Pro Met Phe Ser Leu Lys Phe Lys
 180 185 190
 Asn Leu Ser Trp Lys Asp Asn Lys Val Ser Phe Ile Phe Leu Ile Val
 195 200 205
 Cys Ile Pro Leu Leu Leu Phe Leu Gly Ile Ser Gly Phe Ser Ala Val
 210 215 220
 Ile Val Trp Tyr Ile Ile Leu Ser Leu Leu Thr Arg Lys Asn Lys
 225 230 235

<210> 8457
 <211> 231
 <212> PRT
 <213> B.fragilis

<400> 8457
 Ile Ala Gln Met Gly Arg Leu Lys Lys Leu Lys Lys Ile Arg Ile His
 1 5 10 15
 Arg Glu Gly Thr His Ile Leu Trp Gly Ser Phe Phe Leu Leu Ile
 20 25 30
 Ile Asn Leu Ala Leu Tyr Trp Gly Ile Asp Cys Lys Ile Pro Phe Tyr
 35 40 45
 Leu Val Ala Leu Val Ser Ile Val Val Tyr Leu Leu Met Val Asn Phe

50		55		60	
Phe Arg Cys Pro Ile Arg Leu Phe Gly Gln Asp Thr Glu Lys Ile Val					
65		70		75	80
Val Ala Pro Ala Asp Gly Lys Ile Val Val Ile Glu Glu Val Asp Glu					
	85		90		95
His Glu Tyr Phe His Asp Arg Arg Ile Met Val Ser Ile Phe Met Ser					
	100		105		110
Ile Leu Asn Val His Ala Asn Trp Tyr Pro Val Asp Gly Val Val Lys					
	115		120		125
Lys Val Thr His Asp Asn Gly Lys Phe Met Lys Ala Trp Leu Pro Lys					
	130		135		140
Ala Ser Thr Glu Asn Glu Arg Ser Met Ile Val Ile Glu Thr Pro Glu					
	145		150		155
Gly Val Glu Val Met Ala Arg Gln Ile Ala Gly Ala Met Ala Arg Arg					
	165		170		175
Ile Val Thr Tyr Ala Glu Pro Gly Glu Glu Cys Tyr Ile Asp Glu His					
	180		185		190
Leu Gly Phe Ile Lys Phe Gly Ser Arg Val Asp Val Tyr Leu Pro Leu					
	195		200		205
Gly Thr Glu Ile Cys Val Ser Met Gly Gln Leu Thr Thr Gly Asn Gln					
	210		215		220
Thr Val Ile Ala Lys Leu Lys					
225		230			

<210> 8458

<211> 503

<212> PRT

<213> B.fragilis

<400> 8458

Thr Gly Arg Ile Gly Ser Val Thr Gly Val Ala Arg Asn His Asn Gly		
1	5	10
Gly Val Pro Asp Asn Ser Ala Asn Tyr Phe Arg Ile Glu Phe Ser His		
	20	25
Pro Ile Ala Glu Glu Gly Val Tyr Asp Gly Asp Thr Leu Met Arg His		
	35	40
Arg Pro Thr Leu Glu Ser Asp Tyr Thr Cys Ala Tyr Leu Arg Phe Asn		
	50	55
Val Pro Ala Gly Glu Lys Leu Thr Val Arg Thr Ala Ser Ser Phe Ile		
	65	70
Ser Pro Ala Gln Ala Leu Val Asn Phe Ser Arg Glu Val Gly Gly Lys		
	85	90
Ser Leu Ala Gln Val Arg Glu Glu Ala Arg Lys Gln Trp Asn Ser Tyr		
	100	105
Leu Gly Arg Ile Glu Ala Glu Gly Gly Ser Glu Glu Gln Leu Arg Thr		
	115	120
Phe Tyr Ser Cys Leu Tyr Arg Thr Leu Leu Phe Pro Arg Glu Phe Tyr		
	130	135
Glu Phe Asp Ala Gln Gly Lys Pro Val Tyr Tyr Ser Pro Tyr Asn Gly		
	145	150
Lys Ile Gln Asp Gly Tyr Met Tyr Thr Asp Asn Gly Phe Trp Asp Thr		
	165	170
Phe Arg Ala Val His Pro Leu Phe Thr Leu Leu Tyr Pro Glu Val Ser		
	180	185
Glu Arg Val Thr Gln Ser Ile Leu Asn Ala Tyr Asp Glu Ser Gly Phe		
	195	200
Met Pro Glu Trp Ala Ser Pro Gly His Arg Glu Cys Met Ile Gly Asn		
	210	215
Asn Ser Ile Ser Leu Leu Thr Asp Ala Trp Met Lys Gly Ile Arg Thr		
		220

225 230 235 240
 Ile Cys Pro Glu Lys Ala Leu Glu Ala Met Ile His Gln Thr Glu Gly
 245 250 255
 Arg His Pro Gly Ile Ser Ser Val Glu Arg Asp Gly Phe Gly Tyr Tyr
 260 265 270
 Asp Arg Leu Ser Tyr Val Pro Tyr Pro Glu Val His Glu Ala Thr Ala
 275 280 285
 Lys Thr Leu Glu Tyr Ala Tyr Ala Asp Trp Cys Val Ala Arg Phe Ala
 290 295 300
 Asp Ser Ile Gly Arg Lys Glu Ile Ala Asp Thr Tyr Tyr Arg Lys Ala
 305 310 315 320
 Leu Asn Tyr Arg Asn Leu Tyr Tyr Pro Asp Tyr Gly Phe Met Trp Ala
 325 330 335
 Lys Asp Ala Asn Gly Lys Trp Arg Asp Ala Phe Asp Ala Thr Glu Trp
 340 345 350
 Gly Gly Pro Phe Thr Glu Gly Ser Ser Trp His Trp Thr Trp Ser Val
 355 360 365
 Leu His Asp Pro Glu Gly Leu Ser Arg Leu Met Gly Gly His Thr Ala
 370 375 380
 Met Glu Ala Arg Leu Asp Ser Met Phe Thr Ala Pro Asn Thr Tyr Asn
 385 390 395 400
 Tyr Gly Thr Tyr Gly Phe Val Ile His Glu Ile Ala Glu Met Val Ala
 405 410 415
 Leu Asp Met Gly Gln Tyr Ala His Gly Asn Gln Pro Val Gln His Ala
 420 425 430
 Ile Tyr Leu Tyr Asp Tyr Ile Gly Arg Pro Trp Lys Thr Gln Lys His
 435 440 445
 Val Arg Glu Val Met Asp Lys Leu Tyr His Ser Gly Ser Lys Gly Tyr
 450 455 460
 Cys Gly Asp Glu Asp Asn Gly Gln Thr Thr Ala Gly Met Ser Phe Pro
 465 470 475 480
 Pro Trp Asp Ser Ile Arg Phe Val Pro Val Phe Arg Ser Met Pro Trp
 485 490 495
 Asp Leu Arg Ser Ser Arg Asn
 500

<210> 8459
 <211> 303
 <212> PRT
 <213> B.fragilis

<400> 8459
 Lys Thr Arg Ile Ala Phe Arg Lys Val Gly Gln Glu Arg Thr Val Asp
 1 5 10 15
 Leu Val Leu Thr Ala Ile Leu Ala Asn Gly His Val Leu Ile Glu Gly
 20 25 30
 Val Pro Gly Val Ala Lys Thr Leu Leu Ala Arg Leu Thr Ala Arg Leu
 35 40 45
 Ile Asp Ala Asp Phe Ser Arg Val Gln Phe Thr Pro Asp Leu Met Pro
 50 55 60
 Ser Asp Val Leu Gly Thr Thr Val Phe Asn Met Lys Thr Asn Glu Phe
 65 70 75 80
 Asp Phe His Arg Gly Pro Val Phe Ala Asn Ile Ile Leu Val Asp Glu
 85 90 95
 Ile Asn Arg Ala Pro Ala Lys Thr Gln Ser Ala Leu Phe Glu Val Met
 100 105 110
 Glu Glu Arg Gln Ala Ser Ile Asp Gly Thr Thr Tyr Arg Met Gly Glu
 115 120 125
 Leu Tyr Thr Ile Leu Ala Thr Gln Asn Pro Val Glu Gln Glu Gly Thr

130 135 140
 Tyr Lys Leu Pro Glu Ala Gln Leu Asp Arg Phe Leu Met Lys Ile Thr
 145 150 155 160
 Met Asp Tyr Pro Ser Leu Asp Glu Glu Ile Asn Ile Leu Glu Arg His
 165 170 175
 His Thr Asn Ala Leu Val Lys Leu Glu Glu Ile Gln Pro Val Ile
 180 185 190
 Thr Arg Glu Leu Leu Ser Leu Arg Arg Leu Thr Glu Lys Val Phe
 195 200 205
 Val Asp Arg Thr Leu Leu Gln Tyr Ile Ala Leu Ile Ala Gln Gln Thr
 210 215 220
 Arg Thr Ser Lys Ala Val Tyr Leu Gly Ala Ser Pro Arg Ala Ser Val
 225 230 235 240
 Ala Met Leu Gln Ala Ser Lys Ala Tyr Ala Leu Leu Gln Gly Arg Asp
 245 250 255
 Phe Val Thr Pro Glu Asp Ile Lys Phe Val Ala Pro Tyr Val Leu Gln
 260 265 270
 His Arg Leu Ile Leu Thr Ala Glu Ala Lys Met Glu Gly Tyr Ser Pro
 275 280 285
 Val Lys Val Thr Gln Arg Leu Ile Asp Lys Val Glu Val Pro Lys
 290 295 300

<210> 8460

<211> 339

<212> PRT

<213> B.fragilis

<400> 8460

Phe Ser Tyr Phe Cys Phe Arg Phe Arg Thr Lys Leu Ile Arg Ser Arg
 1 5 10 15
 Thr Gly Trp Met Lys Glu Val Thr Phe Ile Arg Arg Asn Ile Glu Lys
 20 25 30
 Trp Lys Glu Thr Glu Lys Val Val Glu Gln Ala Asp Lys Leu Thr Pro
 35 40 45
 Asp Arg Leu Ala Asp Ala Tyr Thr Glu Leu Thr Ala Asp Leu Ala Phe
 50 55 60
 Ala Gln Thr His Tyr Pro Ser Ser Arg Ile Thr Ile Tyr Leu Asn Asn
 65 70 75 80
 Leu Ala Ser Ala Leu His Asn Val Ile Tyr Arg Asn Lys Lys Glu Lys
 85 90 95
 Trp Thr Arg Ile Phe Thr Phe Trp Thr Gln Glu Val Pro Gln Thr Met
 100 105 110
 Tyr His Ala Arg Lys Glu Leu Leu Val Ser Val Leu Ile Phe Trp Ala
 115 120 125
 Ser Val Leu Val Gly Ile Val Ser Ala Ala Asn Asp Asp Asn Phe Val
 130 135 140
 Arg Leu Ile Leu Gly Asn Gly Tyr Val Asp Met Thr Leu Asp Asn Ile
 145 150 155 160
 Ala Arg Gly Glu Pro Met Ala Val Tyr Asn Gly Ser Glu Glu Val Pro
 165 170 175
 Met Phe Leu Gly Ile Thr Leu Asn Asn Ile Met Val Ser Phe Asn Val
 180 185 190
 Phe Ala Met Gly Leu Leu Thr Ser Phe Gly Thr Gly Trp Leu Leu Phe
 195 200 205
 Asn Asn Gly Val Met Leu Gly Ala Phe Gln Thr Phe Phe Phe Lys His
 210 215 220
 Gly Leu Leu Gly Glu Ser Met Leu Ala Ile Trp Leu His Gly Thr Leu
 225 230 235 240
 Glu Ile Trp Ala Ile Ile Val Ala Gly Ala Gly Leu Ala Leu Gly

245 250 255
 Asn Gly Trp Leu Phe Pro Gly Thr Tyr Ser Arg Lys Glu Ser Phe Met
 260 265 270
 Arg Gly Ala Lys Lys Gly Leu Lys Ile Ile Val Gly Thr Val Pro Ile
 275 280 285
 Phe Ile Met Ala Gly Phe Ile Glu Gly Phe Ile Thr Arg His Thr Glu
 290 295 300
 Leu Pro Asp Val Leu Arg Leu Gly Ile Ile Leu Leu Ser Leu Ser Phe
 305 310 315 320
 Ile Ile Tyr Tyr Tyr Ile Tyr Leu Pro Asn Arg Lys Thr His Gly Ile
 325 330 335
 Thr Lys Thr

<210> 8461

<211> 892

<212> PRT

<213> B.fragilis

<400> 8461

Phe Phe Val Phe Leu Leu His Tyr Glu Thr Asp Asp Ala Phe Ile Glu
 1 5 10 15
 Glu Gln Tyr Met Arg Arg Leu Gly Cys Leu Phe Ala Ile Gly Met Met
 20 25 30
 Trp Leu Cys Ile Val Asp Cys Phe Ser Gln Gly Leu Leu Phe Tyr Gly
 35 40 45
 Asn Glu Lys Arg Ile Ser Glu Arg Ala Thr Tyr Ser Val Leu Arg Glu
 50 55 60
 Gly His Glu Arg Thr Phe Thr Asn Ala Phe Arg Ile Ser Phe Asp Tyr
 65 70 75 80
 Leu Val Arg Asn Val Glu Ser Pro Gly Tyr Ile Leu Tyr Leu Glu Asp
 85 90 95
 Arg Asp Ala Gly Lys Thr Tyr Ser Phe Thr Tyr Leu His Lys Pro Gly
 100 105 110
 Asp Arg Cys Ser Phe Ser Phe Asn Glu Asp Gly Lys Arg Ile Phe Cys
 115 120 125
 Thr Phe Glu Leu Asp Lys Glu Asp Tyr Asp His Arg Trp Leu Pro Val
 130 135 140
 Ser Ile Ala Leu Asp Ile Pro Ala Asp Cys Ala Arg Ile Thr Ile Gly
 145 150 155 160
 Lys Arg Ser Lys Glu Ile Ser Asn Leu Gly Leu Glu Pro Thr Gly Phe
 165 170 175
 Ser Pro His Ile Tyr Phe Gly Lys Cys Glu Tyr Ile Leu Asp Val Ala
 180 185 190
 Ser Tyr Ala Ile Arg Asn Leu Ser Leu Thr Asp Gly Glu Glu Ile Met
 195 200 205
 Ile Phe Pro Leu Asn Glu Ser Ser Gly Glu Asp Val His Asp Ser Arg
 210 215 220
 Gly His Val Val Gly Gln Val Thr Asn Pro Val Trp Leu Ile Asn Gln
 225 230 235 240
 Ser Tyr Tyr Trp Lys Glu Leu Phe Thr Asp Tyr Ser Ser Thr Pro Ser
 245 250 255
 Gly Leu Asn Phe Asp Lys Thr His Gln Asn Ile Leu Phe Phe Asn Gln
 260 265 270
 Asp Ser Leu Ser Ala Phe Asp Leu Tyr Thr His Glu Leu Ser Lys Thr
 275 280 285
 Pro Tyr Lys Thr Pro Leu Pro Val Gln Leu Arg Leu Gly Met Asn Phe
 290 295 300
 Leu Asp Glu Ala Ser Arg Glu Leu Tyr Thr Tyr Glu Val Ala Asp Ser

305		310		315		320
His Gly Asp Ala Met Val Ala Ala Leu Asp Leu Thr Thr Lys Glu Trp						
	325		330			335
Arg Pro Ala Ser Ser Asp Tyr Leu Cys Gln Gln Leu His His His Cys						
	340		345			350
Gly Phe Phe His Pro Gly Glu Arg Lys Phe Phe Leu Phe Gly Gly Tyr						
	355		360			365
Gly Ser Arg Arg Tyr Ser Asn Thr Phe Leu Ala Tyr Asp Leu Asn Thr						
	370		375			380
Cys Arg Trp Asp Thr Leu Ala Phe Ser Gly Asp Arg Val Ile Pro Arg						
385		390		395		400
Tyr Phe Ser Gly Met Ala Val Ser Asn Asp Tyr Lys Arg Val Tyr Leu						
	405		410			415
Tyr Gly Gly Met Gly Asn Glu Ala Gly Asp Gln Asn Val Gly Arg Asn						
	420		425			430
Tyr Leu Tyr Asp Leu Tyr Arg Ile Asp Met Gln Thr Arg Ser Ala Gln						
	435		440			445
Lys Leu Trp Glu Ala Lys Ala Pro Ala Ala Asn Pro Val Gly Pro Arg						
	450		455			460
Asn Met Ile Leu Ser Ala Asp Glu Lys His Leu Phe Leu Leu Gly Tyr						
465		470		475		480
Pro Glu Tyr Leu Pro Asn Ser Thr Leu Gln Leu Tyr Arg Leu Ser Val						
	485		490			495
Arg Asp Gly Glu Cys Glu Ala Val Gly Asp Ser Ile Pro Ile Val Ser						
	500		505			510
Glu Glu Ile Ala Thr Asn Ala Asn Leu Tyr Phe Asn Glu Glu Leu Asn						
	515		520			525
Glu Phe Tyr Cys Ser Val Gln Glu Phe Glu Lys His Gly Gln Val Thr						
	530		535			540
Thr Arg Leu Tyr Ser Leu Ser Ala Pro Pro Val Thr Leu Asp Asp Val						
545		550		555		560
Glu Tyr Tyr Ser Arg Arg Arg Asn Ala Leu Asn Ala Gly Leu Leu Gly						
	565		570			575
Ala Val Val Gly Gly Val Leu Leu Leu Ala Ala Cys Val Trp Gly Ile						
	580		585			590
Met His His Lys Arg Arg Arg Asp Arg Thr Ser Ala Glu Thr Ala Ser						
	595		600			605
Ala Gly Val Arg Pro Glu Glu Val Ser Asp Ile Pro Glu Val Pro Ala						
	610		615			620
Val Glu Ser Pro Glu Val Lys Glu Glu Glu Val Glu Lys Glu Pro Ser						
625		630		635		640
Glu Trp Glu Glu Leu Pro Ala Val Leu Pro Pro Asp Lys Asn Ala Ile						
	645		650			655
Phe Leu Phe Gly Met Phe Thr Ile Leu Asp Asn Ala Gly Arg Asp Ile						
	660		665			670
Thr Tyr Met Leu Ser Pro Lys Leu Arg Thr Ile Phe Leu Tyr Ile Leu						
	675		680			685
Leu Asn Ser Val Gly Lys Arg Gly Val Leu Ser Ser Asp Met Asn Gln						
	690		695			700
Ile Phe Trp Pro Asp Lys Ser Gly Ser Asn Val Lys Asn Leu Lys Gly						
705		710		715		720
Val Ser Met Asn His Val Arg Lys Ile Leu Gln Asp Val Asp Gly Ile						
	725		730			735
Glu Leu Val Tyr Arg Asn Gly Tyr Phe Cys Met Val Phe Gly Glu Glu						
	740		745			750
Phe Tyr Cys Asp Tyr Ile Arg Leu Met Asn Leu Thr Ser Pro Glu Lys						
	755		760			765
Lys Lys Lys Glu Thr Pro Gly Ala Ile Arg Ala Glu Trp Leu Glu Ile						
	770		775			780

Leu Leu Arg Gly Lys Phe Ile Pro Ala Ala Glu Ser Asp Leu Phe Asp
 785 790 795 800
 Tyr Tyr Lys Gln Lys Val Glu Thr Leu Ile His Ser Leu Leu Pro Gly
 805 810 815
 Gln Leu Glu Leu Ala Tyr Gly Asp Ala Arg Phe Ser Ile Val Ile Arg
 820 825 830
 Leu Cys Asn Ile Leu Phe Ile Ala Asp Pro Leu Ser Asp Leu Ala Leu
 835 840 845
 Ala Tyr Thr Val Cys Thr Leu Arg Lys Gln Asn Asn Gln Glu Glu Ala
 850 855 860
 Ile Arg Arg Tyr Ala Ala Phe Thr Lys Asp Tyr Arg Arg Val Met Asn
 865 870 875 880
 Glu Glu Tyr Gly Ile Ala Phe Ala Asp Ile Lys Val
 885 890

<210> 8462
 <211> 474
 <212> PRT
 <213> B.fragilis

<400> 8462

Asn Tyr Glu Phe Phe Val Ile Leu Lys Thr Ser Leu Ile Phe Val Lys
 1 5 10 15
 Lys Glu Ile Thr Arg Leu Asn Ser Met Arg Lys Glu Leu Leu Phe Thr
 20 25 30
 Val Phe Val Ser Val Ala Phe Ile Phe Leu Gln Ala Phe Trp Ile Val
 35 40 45
 Arg Met Tyr Gln Arg Tyr Glu Glu Gln Tyr Thr Glu Gln Val Asn Lys
 50 55 60
 Ala Phe Leu Asp Ala Ile Gly Lys Glu Val Glu Leu Arg Ile Arg Tyr
 65 70 75 80
 Val Glu Glu Phe Lys Thr Pro Ile Leu Ile Lys Pro Thr Gly Cys Val
 85 90 95
 Ser Glu Lys Glu Arg Thr Gly Tyr Lys Gly Asp Thr Ile Asp Leu Val
 100 105 110
 Leu Leu Lys Gln Asn Asp Ile Val Arg Asn Val Ser Glu Phe Leu Ala
 115 120 125
 Gln Leu Glu Gln Asp Glu Leu Leu Ser Ser Arg Val Ser Pro Val Leu
 130 135 140
 Pro Val Ile Asp Ser Leu Leu Arg Glu Glu Leu Ser Gly Leu Lys Ile
 145 150 155 160
 Asp His Tyr Leu Ser Leu Tyr Asp Lys Glu Gly Lys Met Val Asp Ser
 165 170 175
 Leu Gly Asn Thr Ser Leu Arg Gly Glu Arg Arg Val Ile Lys Val Arg
 180 185 190
 Glu Ala Ile Gly Thr Lys Gly Leu Leu Phe Met Gln Ile Glu Ser Lys
 195 200 205
 Leu Pro Tyr Asp Ala Ile Leu Ser Lys Met Phe Tyr Ser Leu Leu Val
 210 215 220
 Phe Ala Leu Ile Ile Met Phe Val Val Gly Cys Leu Ile His Gln Leu
 225 230 235 240
 Arg Val Ile Arg Gln Lys Asp Glu Leu Leu Glu Arg Arg Glu Val Ser
 245 250 255
 Val Asn Gly Ile Val His Asp Leu Lys Ser Pro Leu Asn Ala Leu Val
 260 265 270
 Thr Leu Thr Gly Trp Leu Met Glu Thr Glu Ser Asp Leu Arg Lys Lys
 275 280 285
 Glu Leu Met Ala Glu Val Ile Lys Arg Ala Gly His Gln Thr Ala Gln
 290 295 300

Ile Glu Ser Ile Leu Val Cys Ala Arg Gly Ala Ala Gln Pro Ile Val
 305 310 315 320
 Leu Asn Lys Thr Glu Ile Asn Pro Glu Glu Ile Val Gln Ala Ala Ile
 325 330 335
 Asp Asp Ile Cys Val Glu Leu Lys Ala Lys Pro His Ser Ile Glu Val
 340 345 350
 Ile Asn Glu Ala Ser Gly Leu Thr Cys Leu Gly Asp Arg Gly Tyr Leu
 355 360 365
 Glu Asn Val Met Lys Asn Leu Ile Glu Asn Ala Leu Lys Tyr Ala Asp
 370 375 380
 Asp Gly Val Lys Ile Gln Ile Glu Ile Thr Arg Ile Ser Gln Gly Ile
 385 390 395 400
 Gln Ile Lys Val Lys Asp Asn Gly Trp Gly Ile Ala Pro Lys Tyr Gln
 405 410 415
 Lys Lys Leu Phe Asn Gln Tyr Tyr Gln Val Pro Arg Glu Ala Leu Arg
 420 425 430
 Met Arg Lys Gly Tyr Gly Ile Gly Leu Ala Tyr Val Arg His Ile Ile
 435 440 445
 Arg Ala His Gly Gly Lys Ile Gln Phe Lys Ser Arg Glu Asn Glu Gly
 450 455 460
 Ser Val Phe Thr Phe Tyr Ile Pro Glu Lys
 465 470

<210> 8463

<211> 213

<212> PRT

<213> B.fragilis

<400> 8463

Arg Cys Ser Ser Asn Gly Arg Val Ser Leu Arg Ser Ala Trp Trp Arg
 1 5 10 15
 Trp Pro Cys Ile Leu Pro Arg Trp Leu Glu Met Val Glu Glu Ala Ile
 20 25 30
 Gly Trp Lys Gly Leu Thr Cys Ala Ala Asn Leu Phe Tyr Ala Tyr Thr
 35 40 45
 Arg Glu Cys Tyr Asp Asp Val Asp Glu Ala Arg Ile Thr Pro Tyr Thr
 50 55 60
 Leu Leu Ser Pro Leu Glu Ile Ser Val Gly Val Val Asp Thr Ala Trp
 65 70 75 80
 Phe Trp Lys Ala Tyr Asn Ala Leu Gly Arg Glu Arg Tyr Glu Lys Val
 85 90 95
 Phe Ala Ala Ser Lys Ala Val Thr Glu Ser Ser Gly Val Tyr Ser Arg
 100 105 110
 Phe Arg Lys Tyr Thr Asp Ala Leu Val Gly Lys Tyr Thr Ile Ala Gln
 115 120 125
 Leu Glu Ser Leu Val Met Asp Asn Arg Asn Lys Asp Trp Val Arg Ala
 130 135 140
 Tyr Pro Leu Ala Pro Phe Ala Gly Lys Ala Arg Lys Lys Glu Val Asp
 145 150 155 160
 Ala Arg Leu Arg Phe Leu Lys Ala Phe Trp Leu Ser Ser Asp Thr Leu
 165 170 175
 Ser Gly Arg His Thr Ala Glu Lys Glu Ala Val Gln Val Ala Leu Asp
 180 185 190
 Asn Leu Thr Gly Asn Ser Gly Leu Gly Asn Leu Asp Thr Arg Trp Phe
 195 200 205
 Lys Lys Lys Val Trp
 210

<210> 8464

<211> 98
 <212> PRT
 <213> B.fragilis

<400> 8464

Asn	His	Ile	Pro	Arg	Lys	Pro	Ala	Trp	Arg	Thr	Thr	Pro	Ser	Thr	Ser
1				5					10					15	
Arg	Val	Arg	Gly	Met	Pro	Glu	His	Trp	Val	Gly	Tyr	Cys	Tyr	Ala	Trp
			20					25					30		
Gly	Tyr	Ala	Asp	Asn	His	Pro	Asn	Thr	Glu	Tyr	Ser	Gln	Phe	Lys	
		35					40				45				
Ile	Asp	Trp	Ala	Val	Asp	Lys	Asp	Gly	Lys	Pro	Val	His	Leu	Asp	Gly
	50					55					60				
Ile	Asp	Phe	Val	Lys	Ile	Tyr	Thr	Ala	Val	Asn	Gln	Asn	Cys	Gly	Trp
65					70					75					80
Leu	Gly	Glu	Ala	Ser	Thr	Glu	Ile	Gln	Ala	Val	Glu	Asp	Leu	His	Tyr
				85					90					95	

Lys Lys

<210> 8465
 <211> 524
 <212> PRT
 <213> B.fragilis

<400> 8465

Leu	Asn	Asn	Pro	Asn	Lys	Thr	Leu	Ile	Tyr	Arg	Leu	Val	Ser	Cys	Leu
1				5					10					15	
Cys	Cys	Thr	Phe	Ala	Val	Gln	Tyr	Leu	Asp	Val	Phe	Gln	Thr	His	Val
			20					25					30		
Arg	Met	Lys	Arg	Arg	Asn	Tyr	Phe	Ile	Phe	Ser	Cys	Leu	Met	Leu	Met
		35					40					45			
Ala	Pro	Ala	Ala	Val	Gln	Ala	Gln	Phe	Asp	Lys	Gly	Leu	Asn	Tyr	Lys
	50					55					60				
Ile	Glu	Thr	Ser	Ala	Thr	Val	Ser	Gly	Gly	His	Asn	Thr	Pro	Phe	Trp
65					70					75					80
Leu	Val	Ala	Asn	Lys	His	Gly	Leu	Ser	Ser	Ile	Arg	Lys	Asn	Asn	Ala
				85					90					95	
Tyr	Leu	Asp	Ala	Gly	Ile	Phe	Arg	Asp	Leu	Glu	Lys	Asp	Lys	Lys	Phe
			100					105					110		
Ser	Tyr	Ala	Phe	Gly	Leu	Glu	Met	Val	Gly	Ala	Ser	Arg	Phe	Thr	Ser
		115					120					125			
Lys	Phe	Phe	Ile	Gln	Gln	Ala	Tyr	Val	Asp	Leu	Arg	Tyr	Arg	Gly	Met
	130					135				140					
Glu	Ile	Ser	Val	Gly	Ser	Lys	Glu	Arg	Gly	Asn	Glu	Met	Lys	Asn	Asp
145					150					155					160
Gln	Leu	Ser	Ser	Gly	Ser	Met	Thr	Phe	Ser	Thr	Asn	Ala	Arg	Pro	Ile
				165					170					175	
Pro	Gln	Val	Arg	Val	Ser	Ile	Pro	Glu	Tyr	Ile	Pro	Phe	Pro	Trp	Thr
		180						185					190		
Lys	Asn	Trp	Leu	His	Ile	Lys	Gly	His	Val	Ala	Tyr	Gly	Met	Phe	Thr
	195					200						205			
Asp	Glu	Lys	Phe	Gln	Glu	Arg	Phe	Thr	Ala	Gly	Arg	Ser	Lys	Tyr	Thr
	210					215					220				
Lys	Glu	Thr	Leu	Phe	His	Ser	Lys	Ala	Ala	Phe	Leu	Lys	Val	Glu	Asn
225					230					235					240
Leu	Gln	Lys	Ser	Pro	Val	Ser	Val	Glu	Leu	Gly	Ile	Glu	Met	Ala	Ala
				245					250					255	

Gln Phe Gly Gly Asp Cys Tyr Tyr Pro Asp Gly Thr Val Leu Arg Thr

260	265	270
Pro Asp Ser Trp Lys Asp Phe Phe Arg Ile Phe Phe Pro Ser Asn Gly		
275	280	285
Asp Ser Gly Ala Ser Glu Ser Asp Gln Ile Asn Ile Leu Gly Asn His		
290	295	300
Val Gly Ser Tyr Ser Ala Ala Val Gly Tyr His Phe Pro Thr Trp Lys		
305	310	315
Ile Lys Ala Tyr Trp Glu His Phe Phe Glu Asp Arg Ser Gly Met Thr		
325	330	335
Leu Thr Tyr Gly Met Trp Arg Asp Cys Leu Ala Gly Leu Glu Val Thr		
340	345	350
Leu Pro Glu Asn Pro Phe Val Lys Thr Ile Val Gly Glu Phe Leu Tyr		
355	360	365
Thr Lys His Gln Ser Gly Ala Phe His Tyr Phe Ala Thr Pro Ala Ile		
370	375	380
Asp His Ser Phe Thr Gly Ala Asp Asn Tyr Tyr Asn Asn Ser Gln Tyr		
385	390	395
Ala Gly Trp Glu His Trp Gly Gln Gly Ile Gly Asn Pro Leu Val Thr		
405	410	415
Ser Pro Ile Tyr Asn Lys Asp Gly Asn Leu Ala Phe Glu Ser Asn Arg		
420	425	430
Val Lys Gly Phe His Ile Gly Leu Asn Gly Ser Pro Thr Pro Glu Ile		
435	440	445
Asp Tyr Arg Ile Leu Val Ser Val Ala Lys His Trp Gly Thr Tyr Gly		
450	455	460
Ser Pro Tyr Arg Asn Ile Arg Arg Asn Gln Asn Gly Leu Leu Glu Val		
465	470	475
Thr Tyr Lys Pro Glu Gln Ile Arg Gly Trp Ser Phe Thr Leu Ala Gly		
485	490	495
Ala Val Asp Gly Gly Asn Met Leu Gly Glu Ser Trp Gly Gly Met Leu		
500	505	510
Thr Ile Arg Lys Thr Gly Leu Ile Gly Lys Lys Lys		
515	520	

<210> 8466

<211> 118

<212> PRT

<213> B.fragilis

<400> 8466

Tyr Ser Phe Tyr Leu Cys Ser Ala Leu Val Cys Ile Leu Arg Val Pro	
1	5 10 15
Gly Met Gln Leu Lys Gly Asn Gln Val Gln Ile Leu Asn Ser Pro Ala	
20	25 30
Ala Val Ser Phe Thr Ser Asp Cys Cys Lys Gln Pro Pro Leu Ala Thr	
35	40 45
Gly Lys Arg Phe Leu Gly Arg Arg Leu Ser Thr Glu Thr Ser Gln Lys	
50	55 60
Thr Cys Leu Cys Ile Phe Phe Ile Ala Phe Glu Glu Lys Ala Leu Ser	
65	70 75 80
Leu Met Ser Arg Asn Tyr Ser Ile Arg His Phe Ile His His Ser Asp	
85	90 95
Ser Glu Lys Val Ser Tyr Asp Asn Lys Leu Cys Gln Val Tyr Leu Val	
100	105 110
Cys Pro Ala Glu Val Ser	
115	

<210> 8467

<211> 597

<212> PRT

<213> B.fragilis

<400> 8467

Asn	Ile	Thr	Tyr	Met	Asn	Leu	Pro	Val	Thr	Gln	Lys	His	Phe	Leu	Ser
1				5					10					15	
Phe	Ser	Arg	Lys	Leu	Phe	Leu	Ser	Val	Ile	Ser	Leu	Phe	Leu	Val	Phe
			20					25					30		
Ala	Ala	Cys	Phe	Met	Ala	Tyr	Gln	Tyr	Gln	Arg	Glu	Lys	Glu	Tyr	Lys
		35					40					45			
Val	Glu	Leu	Leu	Asn	Ile	Gln	Leu	Gln	Asp	Cys	Asn	Asn	Leu	Leu	Tyr
	50					55					60				
Glu	Lys	Leu	Tyr	Asp	His	Pro	Gln	Asp	Met	Thr	Glu	Val	Ile	Ser	Asp
65					70					75				80	
Tyr	Leu	Gln	His	Asn	Val	Leu	Lys	Asp	Leu	Arg	Ile	Thr	Val	Val	Asn
				85					90					95	
Leu	Asp	Gly	Lys	Val	Leu	Phe	Asp	Ser	Gln	Glu	Gln	Asn	Val	Glu	Gln
			100					105					110		
Leu	Gly	Asn	His	Leu	Asp	Arg	Glu	Glu	Val	Gln	Lys	Ala	Leu	Tyr	Asn
		115					120					125			
Gly	Val	Gly	Phe	Asp	Val	Arg	Arg	Thr	Ser	Glu	Thr	Thr	Gly	Val	Pro
	130					135						140			
Tyr	Phe	Tyr	Ser	Ala	Thr	Leu	Tyr	Lys	Asp	Tyr	Ile	Ile	Arg	Ser	Ala
145					150					155					160
Leu	Pro	Tyr	Ser	Val	Ser	Leu	Ile	Asn	Asn	Leu	Lys	Ala	Asp	Pro	His
				165					170					175	
Tyr	Ile	Trp	Phe	Thr	Val	Ile	Val	Thr	Leu	Leu	Leu	Met	Ile	Ile	Phe
			180					185					190		
Tyr	Lys	Phe	Thr	Asn	Lys	Leu	Gly	Thr	Ser	Ile	Ser	Gln	Leu	Arg	Glu
		195					200					205			
Phe	Ala	Met	Arg	Ala	Asp	Arg	Asn	Glu	Pro	Ile	Glu	Met	Ala	Met	Gln
	210					215					220				
Ser	Ala	Phe	Pro	His	Asn	Glu	Leu	Gly	Glu	Ile	Ser	Gln	His	Ile	Ile
225					230					235					240
Gln	Ile	Tyr	Lys	Arg	Leu	His	Glu	Thr	Lys	Glu	Ala	Leu	Tyr	Ile	Glu
			245						250					255	
Arg	Glu	Lys	Leu	Ile	Thr	His	Leu	Gln	Ile	Ser	His	Glu	Gly	Leu	Gly
			260					265					270		
Val	Phe	Asn	Lys	Asp	Lys	Lys	Glu	Ile	Leu	Val	Asn	Asn	Leu	Phe	Thr
		275					280					285			
Gln	Tyr	Ser	Asn	Leu	Ile	Ser	Asp	Ser	Asn	Leu	Glu	Thr	Ala	Glu	Glu
	290					295					300				
Val	Phe	Asn	Ile	Ser	Glu	Leu	Lys	Glu	Ile	Thr	Asp	Phe	Ile	Asn	Lys
305					310					315					320
Ala	Pro	Lys	Arg	Pro	Val	Gly	Lys	Glu	Glu	Lys	Arg	Met	Ser	Ile	Thr
			325						330					335	
Ile	Asn	Lys	Asn	Gly	Lys	Thr	Phe	Ile	Val	Glu	Cys	Ile	Ile	Phe	Gln
			340				345						350		
Asp	Met	Ser	Phe	Glu	Ile	Ser	Ile	Asn	Asp	Val	Thr	Gln	Glu	Glu	Glu
	355						360					365			
Gln	Ile	Arg	Leu	Lys	Arg	Gln	Leu	Thr	Gln	Asn	Ile	Ala	His	Glu	Leu
	370					375					380				
Lys	Thr	Pro	Val	Ser	Ser	Ile	Gln	Gly	Tyr	Leu	Glu	Thr	Ile	Val	Asn
385					390					395					400
Asn	Glu	Asn	Leu	Pro	Lys	Glu	Lys	Met	Asn	Val	Phe	Leu	Glu	Arg	Cys
			405						410					415	
Tyr	Ala	Gln	Ser	Asn	Arg	Leu	Ser	Arg	Leu	Leu	Arg	Asp	Ile	Ser	Val
			420					425					430		
Leu	Thr	Arg	Met	Asp	Glu	Ala	Ala	Asn	Met	Ile	Asp	Met	Glu	Lys	Met

435	440	445
Asp Ile Ser Val Leu Val Thr Asn Ile Val Asn Glu Val Ser Leu Glu		
450	455	460
Leu Glu Glu Lys His Ile Thr Val Val Asn Ser Leu Lys Lys Glu Ile		
465	470	475
Gln Ile Arg Gly Asn Tyr Ser Leu Leu Tyr Ser Ile Phe Arg Asn Leu		
	485	490
Met Asp Asn Ala Ile Ala Tyr Ala Gly Asn Asn Ile Gln Ile His Ile		
	500	505
Asn Cys Phe Arg Glu Asp Glu Lys Phe Tyr Tyr Phe Ser Phe Ala Asp		
	515	520
Thr Gly Val Gly Val Ser Pro Glu His Leu Asn Arg Leu Phe Glu Arg		
	530	535
Phe Tyr Arg Val Asp Lys Gly Arg Ser Arg Lys Leu Gly Gly Thr Gly		
545	550	555
Leu Gly Leu Ala Ile Val Lys Asn Ala Val Ile Leu His Gly Gly Asn		
	565	570
Ile Ser Ala Lys Asn Ser Gln Gly Gly Gly Leu Glu Phe Val Phe Thr		
	580	585
Leu Ala Lys Glu Arg		590
595		

<210> 8468
 <211> 323
 <212> PRT
 <213> B.fragilis

<400> 8468

Lys Tyr Tyr Leu Cys Pro Ile Ser Lys Gln Lys Ile Met Met Asn Asn		
1	5	10
Val Lys Tyr Leu Ser Phe Ala Leu Ile Leu Ala Phe Ser Ala Cys Lys		
	20	25
Ser Gly Ser Ala Ser Ser Gln Glu Pro Ser Glu Lys Gln Asp Thr Val		
	35	40
Lys Ile Phe Asn Leu Pro Gln Ile Pro Val Val Leu Asn Thr Val Glu		
	50	55
Gln Arg Thr Asp Tyr Met Val Lys His Tyr Trp Asp Arg Phe Asp Phe		
65	70	75
Ser Asp Thr Thr Tyr Ile Asn Gln Ala Glu Val Pro Glu Gln Ala Trp		
	85	90
Val Asp Tyr Cys Asp Leu Leu Glu His Val Pro Leu Pro Val Ala Gln		
	100	105
Thr Ala Met Lys Glu Thr Phe Asn Arg Ala Glu Lys Asn Arg Lys Met		
	115	120
Leu His Phe Phe Glu Glu Leu Ala Asp Lys Tyr Leu Tyr Asp Pro Asn		
	130	135
Ser Pro Met Arg Asn Glu Glu Phe Tyr Ile Pro Val Leu Glu Ala Leu		
145	150	155
Ile Ala Ser Pro Ala Leu Asp Glu Thr Ala Lys Ile Arg Pro Gln Ala		
	165	170
Arg Leu Glu Leu Ala Gln Lys Asn Arg Leu Gly Thr Lys Ala Leu Asn		
	180	185
Phe Thr Tyr Thr Leu Asp Ser Gly Ala Lys Gly Thr Leu Tyr Gln Phe		
	195	200
Pro Ala Glu Tyr Thr Leu Leu Phe Ile Asn Asn Pro Gly Cys His Ala		
	210	215
Cys Ala Glu Met Ile Glu Gly Leu Lys Ala Ser Pro Val Ile Asn Gly		
225	230	235
Phe Thr Ala Ala Lys Lys Leu Lys Val Leu Ser Ile Tyr Pro Asp Glu		

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<210> 8469
<211> 632
<212> PRT
<213> B.fragilis
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Tyr 1	Thr	Asn	His	Leu 5	Leu	Ser	His	Ser	Ile 10	Ile	Met	Thr	Pro	Tyr 15	Leu
Gln	Val	Asp	Asn 20	Leu	Thr	Lys	Ser	Phe 25	Gly	Asp	Leu	Val	Leu 30	Phe	Glu
Asn	Ile	Ser 35	Phe	Gly	Ile	Ala 40	Glu	Gly	Gln	Arg	Ile	Gly 45	Leu	Ile	Ala
Lys 50	Asn	Gly	Thr	Gly	Lys	Thr 55	Thr	Leu	Leu	Asn	Ile 60	Leu	Ser	Gly	Lys
Glu 65	Gly	Tyr	Asp	Ser 70	Gly	Asn	Ile	Val	Phe 75	Arg	Arg	Asp	Leu	Arg	Val
Asp	Tyr	Leu	Glu 85	Gln	Asp	Pro	Gln	Tyr 90	Pro	Glu	Glu	Leu	Thr 95	Val	Leu
Glu	Ala	Cys	Phe 100	His	His	Gly	Asn 105	Ser	Thr	Val	Glu	Leu 110	Ile	Lys	Glu
Tyr	Glu	Arg 115	Cys	Met	Glu	Thr 120	Glu	Gly	His	Pro	Gly 125	Leu	Asp	Asp	Leu
Leu 130	Val	Arg	Met	Asp	His 135	Glu	Lys	Ala	Trp	Glu	Tyr 140	Glu	Gln	Lys	Ala
Lys 145	Gln	Ile	Leu	Ser 150	Gln	Leu	Lys	Ile	Arg	Asn 155	Phe	Asp	Gln	Gln	Val
Lys	His	Leu	Ser 165	Gly	Gly	Gln	Leu	Lys 170	Arg	Val	Ala	Leu 175	Ala	Asn	Ala
Leu	Ile	Thr 180	Glu	Pro	Asp	Leu	Leu 185	Ile	Leu	Asp	Glu	Pro 190	Thr	Asn	His
Leu	Asp 195	Leu	Asp	Met	Thr	Glu 200	Trp	Leu	Glu	Glu	Tyr 205	Leu	Arg	Arg	Thr
Asn 210	Leu	Ser	Leu	Leu	Met 215	Val	Thr	His	Asp	Arg	Tyr 220	Phe	Leu	Asp	Arg
Val 225	Cys	Ser	Glu	Ile 230	Ile	Glu	Ile	Asp	Asn 235	Arg	Gln	Val	Tyr	Gln	Tyr
Lys	Gly	Asn	Tyr 245	Ser	Tyr	Tyr	Leu	Glu 250	Lys	Arg	Gln	Glu 255	Arg	Ile	Glu
Ala	Lys	Ser 260	Val	Glu	Ile	Glu	Arg 265	Ala	Asn	Asn	Leu	Tyr 270	Arg	Thr	Glu
Leu	Asp 275	Trp	Met	Arg	Arg	Met 280	Pro	Gln	Ala	Arg	Gly	His 285	Lys	Ala	Arg
Tyr	Arg 290	Glu	Asp	Ala	Phe 295	Tyr	Glu	Leu	Glu	Lys 300	Val	Ala	Lys	Gln	Arg
Phe 305	Asn	Asn	Asp	Asn 310	Val	Lys	Leu	Glu 315	Val	Lys	Ala	Ser 320	Tyr	Ile	Gly
Ser	Lys	Ile	Phe	Glu	Ala	Asp	His	Leu	Tyr	Lys	Ser	Phe	Gly	Asp	Leu

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

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          325          330          335
Lys Ile Leu Glu Asp Phe Ser Tyr Ile Phe Ala Arg Tyr Glu Lys Met
          340          345          350
Gly Ile Val Gly Asn Asn Gly Thr Gly Lys Ser Thr Phe Ile Lys Ile
          355          360          365
Leu Met Gly Gln Val Gln Pro Asp Ser Gly Thr Leu Asp Ile Gly Glu
          370          375          380
Thr Val Arg Phe Gly Tyr Tyr Ser Gln Asp Gly Leu Gln Phe Asp Glu
          385          390          395          400
Gln Met Lys Val Ile Asp Val Val Gln Asp Ile Ala Glu Val Ile Glu
          405          410          415
Leu Gly Asn Gly Lys Lys Leu Thr Ala Ser Gln Phe Leu Gln His Phe
          420          425          430
Leu Phe Thr Pro Glu Thr Gln His Ser Tyr Val Tyr Lys Leu Ser Gly
          435          440          445
Gly Glu Arg Arg Arg Leu Tyr Leu Cys Thr Val Leu Met Arg Asn Pro
          450          455          460
Asn Phe Leu Val Leu Asp Glu Pro Thr Asn Asp Leu Asp Ile Ile Thr
          465          470          475          480
Leu Asn Val Leu Glu Glu Tyr Leu Gln Asn Phe Lys Gly Cys Val Ile
          485          490          495
Val Val Ser His Asp Arg Tyr Phe Met Asp Lys Val Val Asp His Leu
          500          505          510
Leu Val Phe Asn Gly Gln Gly Asp Ile Arg Asp Phe Pro Gly Asn Tyr
          515          520          525
Ser Asp Tyr Arg Asp Trp Lys Glu Ala Lys Ser Gln Lys Glu Lys Glu
          530          535          540
Ala Glu Lys Pro Gln Glu Glu Lys Thr Ala Arg Val Arg Leu Asn Glu
          545          550          555          560
Lys Arg Lys Met Ser Phe Lys Glu Lys Arg Glu Phe Glu Gln Leu Glu
          565          570          575
Lys Glu Ile Ala Glu Leu Glu Thr Glu Lys Leu Gln Ile Glu Glu Leu
          580          585          590
Leu Cys Ser Gly Thr Leu Ser Val Asp Glu Leu Thr Glu Lys Ser Lys
          595          600          605
Arg Leu Pro Glu Val Asn Asp Leu Ile Asp Glu Lys Thr Met Arg Trp
          610          615          620
Leu Glu Leu Ser Glu Ile Glu Ser
          625          630

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<210> 8470

<211> 284

<212> PRT

<213> B.fragilis

<400> 8470

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Gly Tyr Gln His Ser Glu Ser Asn Met Ile Gln Gly Lys Lys Phe Ile
1          5          10          15
Ser Pro Gly Thr Trp Phe Ser Met Ile Tyr Pro Ser Asp Trp Ser Glu
          20          25          30
Phe Glu Asp Gly Glu Gly Ser Phe Leu Phe Tyr Asn Pro Glu His Trp
          35          40          45
Thr Gly Asn Phe Arg Ile Ser Ala Tyr Lys Glu Asp Ala Ala Ala Pro
          50          55          60
Gly Gly Met Asn Tyr Gly Lys Asp Ser Val Arg Gln Glu Leu Lys Glu
          65          70          75          80
Asn Pro Ser Ala Ser Leu Val Lys Val Gly His Leu Glu Cys Ala Tyr
          85          90          95
Ser Lys Glu Met Phe Glu Glu Glu Gly Thr Tyr Tyr Thr Ser His Leu

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100	105	110
Trp Val Thr Gly Ile Asp Asn Val Ala Phe Glu Cys Ser Phe Thr Val		
115	120	125
Pro Lys Gly Glu His Val Asp Glu Ala Glu Lys Ile Ile Ser Ser Leu		
130	135	140
Glu Ile Arg Lys Asp Gly Gln Lys Tyr Pro Ala Glu Ile Ile Pro Ile		
145	150	155
Arg Leu Ser Glu Ile Tyr Gln Val Asn Glu Ala Tyr Glu Trp Val Thr		
165	170	175
Asp Thr Val Lys Thr Gln Leu Lys Lys Asp Phe Gln Gly Leu Glu Glu		
180	185	190
Asp Leu Gln Lys Ile Gln Asp Val Ile Asp Ser Gly Val Leu Ser Pro		
195	200	205
Lys Lys Lys Glu Pro Trp Leu Ala Phe Gly Ile Ala Ile Cys Thr Ile		
210	215	220
Leu Ala Asn Glu Val Glu Gly Met Glu Trp Met Thr Leu Val Asp Gly		
225	230	235
Asn Arg Glu Val Pro Val Leu Arg Tyr Glu Gly Ser Glu Gln Leu Ile		
245	250	255
Asp Pro Met Lys Leu Leu Trp Ser Arg Val Lys Ala Gly Glu Ala Cys		
260	265	270
Glu Val Ala Glu Ala Tyr Lys Gln Ala Leu Ile His		
275	280	

<210> 8471
 <211> 129
 <212> PRT
 <213> B.fragilis

<400> 8471

Glu Glu Met Lys Lys Gly Ile Leu Leu Leu Phe Val Val Leu Met Gly		
1	5	10
Phe Thr Ser Cys Gly Lys Lys Phe Gly His Arg Tyr Leu Asp Gly Met		
20	25	30
Trp Gln Met Gln Arg Ile Glu Tyr Lys Asp Gly Asn Ile Asp Thr Pro		
35	40	45
Leu Asp Thr Tyr Phe Ser Phe Gln Met Asp Ile Ile His Leu Arg Lys		
50	55	60
Leu Gly Asn Ser Glu Phe Tyr Gly Lys Tyr Val Tyr Glu Asn Asp Ser		
65	70	75
Met His Ile Gln Val Leu Asp Ala Thr Ala Glu Gln Met Lys Val Phe		
85	90	95
Gly Met Asp Gly Arg Val Gln Asp Phe Ala Val Glu Lys Leu Asn Ser		
100	105	110
Asn Lys Leu Val Leu Gln Ser Asp Tyr Ala Arg Leu Glu Phe Arg Lys		
115	120	125

Tyr

<210> 8472
 <211> 582
 <212> PRT
 <213> B.fragilis

<400> 8472

Asp Thr Lys Asp Thr Pro Asp Ile Glu Ser Val Ile Ile Lys Arg Ile		
1	5	10
Ser Asn Met Lys Thr Thr Ser Phe Asn Asn Gly Arg Ser Asn Ser Ser		
20	25	30

Ser Leu Phe Arg Arg Gly Ile Gly Gly Val Ser Phe Phe Phe Leu Leu
 35 40 45
 Phe Leu Leu Leu Phe Ala Ser Cys Asp Asp Leu Glu Asp Thr Asp Thr
 50 55 60
 Pro Ser Gly Gly Asp Gly Gly Met Pro Val Glu Thr Gly Thr Ala Glu
 65 70 75 80
 Leu Tyr Ile Leu Ser Glu Gly Leu Phe Asn Leu Asn Asn Ser Ser Leu
 85 90 95
 Ala Leu Tyr Ser Phe Lys Asn Asn Gln Leu Asn Thr Asp Tyr Phe Arg
 100 105 110
 Ser Ile Asn Arg Arg Gly Leu Gly Asp Thr Ala Asn Asp Met Gly Ile
 115 120 125
 Tyr Gly Ser Lys Leu Tyr Ile Val Val Asn Val Ser Ser Gln Ile Glu
 130 135 140
 Val Val Asp Leu Gln Ser Gly Lys Ser Val Lys Gln Ile Pro Met Leu
 145 150 155 160
 Ser Glu Asn Gly Ser Ser Arg Gln Pro Arg Asn Ile Ala Phe Asp Gly
 165 170 175
 Gly Lys Ala Tyr Val Cys Ser Phe Asp Gly Thr Val Ala Arg Ile Asp
 180 185 190
 Thr Ala Ser Leu Ser Ile Asp Ala Leu Thr Arg Ala Gly Arg Asn Pro
 195 200 205
 Asp Gly Ile Cys Val Gln Asn Gly Lys Leu Tyr Val Ser Asn Ser Gly
 210 215 220
 Gly Leu Asp Trp Glu Gly Ile Gly Val Asp Arg Thr Val Ser Val Ile
 225 230 235 240
 Asp Ile Pro Ser Phe Thr Glu Ile Lys Lys Ile Glu Val Gly Pro Asn
 245 250 255
 Pro Gly Asp Ile Gln Ala Gly Pro Asp Gly Ser Val Tyr Val Ala Thr
 260 265 270
 His Gly Glu Asn Ile Glu Ala Gly Asp Tyr His Phe Val Gln Ile Asp
 275 280 285
 Gly His Thr Asp Gln Val Val Arg Thr Phe Asp Glu Lys Val Leu Ser
 290 295 300
 Phe Thr Ile His Asp Asn Met Ala Tyr Leu Tyr Asn Tyr Asp Tyr Arg
 305 310 315 320
 Thr Gln Asp Ser Gln Ile Lys Val Phe Asn Leu Lys Ala Gly Lys Thr
 325 330 335
 Glu Arg Glu Asn Phe Ile Thr Asp Gly Thr Thr Ile Arg Thr Pro Tyr
 340 345 350
 Ser Ile Ser Val Asn Pro Tyr Ser Gly Asn Val Tyr Ile Thr Asp Ala
 355 360 365
 Tyr Asp Tyr Lys Val Lys Gly Asp Val Leu Cys Phe Ser Pro Gln Gly
 370 375 380
 Gln Leu Ile Phe Lys Leu Pro Asn Val Gly Ile Asn Ser Asn Thr Val
 385 390 395 400
 Leu Phe Arg Asn Lys Ala Ser Gln Gly Asn Pro Asp Glu Asn Pro Ala
 405 410 415
 Asp Ala Glu Ala Gly Ala Phe Ala Asn Lys Val Leu Glu Tyr Asn Pro
 420 425 430
 Ala Pro Ser Gln Tyr Met Asn Thr Ser Tyr Thr Ala Tyr Glu Glu Gly
 435 440 445
 Phe Thr Gly Ile Gln Val Leu Ala Arg Ala Thr Glu Leu Leu Gln Asp
 450 455 460
 Arg Thr Thr Cys Leu Phe Thr Leu Gly Gly Phe Gly Gly Asn Ile Thr
 465 470 475 480
 Val Gly Phe Asp His Thr Ile Pro Asn Val Pro Gly Glu Tyr Asp Phe
 485 490 495
 Lys Ile Tyr Gly Asn Ala Tyr Tyr Asp Met Tyr Gly Thr Leu Leu Asp

500 505 510
 Lys Pro Gly Gly Asn Ser Glu Pro Gly Ile Val Leu Val Ser Lys Asp
 515 520 525
 Thr Asn Gly Asn Gly Leu Pro Asp Asp Glu Trp Tyr Glu Leu Ala Gly
 530 535 540
 Ser Glu Tyr Asn Ser Pro Ala Thr Ile Arg Asn Tyr Glu Ile Ile Tyr
 545 550 555 560
 Tyr Pro Ser Pro Ser Ala Asp Gly Asp Val Lys Trp Lys Asp Asn Gln
 565 570 575
 Gly Lys Glu Gly Tyr Ile
 580

<210> 8473
 <211> 413
 <212> PRT
 <213> B.fragilis

<400> 8473

Ile Glu Thr Cys Glu Pro Asp Arg Cys Arg Pro Ser Ser Pro Val Val
 1 5 10 15
 Lys Thr Thr Ala Val Phe Leu Ala Asn Val Glu Lys Thr Gln Phe Pro
 20 25 30
 Ile Pro Val Ser Gly Gly Gly Thr Asn Tyr Ala Asp Val Leu Thr Asn
 35 40 45
 Tyr Gln Thr Thr Arg Ala Asn Ala Arg Ile Val Leu Pro Gly Ala Glu
 50 55 60
 Phe Thr Asp Thr Ser Glu Phe Tyr Leu Ala Asn Val Ser Phe Ser Asp
 65 70 75 80
 Thr Ser Ala Gln Pro Tyr Val Leu Leu Gln Arg Ile Ile Ser Met Leu
 85 90 95
 Asn Leu Arg Arg Val Phe Val Asp Ala Gln Thr Ala Leu Asn Ser Leu
 100 105 110
 Thr Asn Asn Ile Val Thr Gln Val Gly Tyr Lys Asn Ile Ile Arg Thr
 115 120 125
 Thr Val Gln Gly Ile Leu Pro Gly Leu Leu Lys Thr Ala Met Asn Leu
 130 135 140
 Gly Pro Val Gly Asn Leu Val Tyr Asp Val Val Gly Gly Leu Asp Ala
 145 150 155 160
 Ala Val Asn Leu Val Val Ala Ala Leu Val Glu Pro Val Val Asp Ala
 165 170 175
 Leu Tyr Ala Gln Leu Leu Gln Gly Leu Val Asn Gln Ile Gly Leu Thr
 180 185 190
 Leu Ser Gly Asn Ala Thr Gln Asn Gly Ala Leu Gly Ala Leu Gly Asp
 195 200 205
 Leu Leu Asn Pro Trp Arg Gly Ser Asp Ala Ala Tyr Ala Leu Val Thr
 210 215 220
 Ile Asn Asn Phe Pro Lys Thr Met Asp Leu Asp Leu Asn Val Lys Asp
 225 230 235 240
 Phe Tyr Thr Gly Asn His Arg Phe Arg Tyr Gly Phe Thr Pro Thr Pro
 245 250 255
 Gly Thr Thr Asn Ser Glu Lys Asp Ile Leu Ile Arg Gly Phe His Gly
 260 265 270
 Leu Tyr Asp Val Arg Glu Ile His Val Ala Lys Pro Gly Leu Ile Ser
 275 280 285
 Gly Leu Leu Val Asp Asp Val Ile Asp Gly Pro Leu Leu Leu Asn Gly
 290 295 300
 Val Phe Val Asn Ile Thr Asp Pro Ile Gln Ala Thr Val Asn Thr Asn
 305 310 315 320
 Tyr Arg Tyr Arg Ser Asn Tyr Ser Phe Val Ser Leu Gly Leu Lys Ser

8473
 413
 PRT
 B.fragilis

325 330 335
 Tyr Ala Gln Gln Ser Asp Gly Asn His Ser Leu Thr Leu Ser Val Gln
 340 345 350
 Leu Lys Asn Ile Ala Asn Leu Asp Gly Ile Leu Gly Gly Ile Pro Val
 355 360 365
 Leu Gly Pro Val Leu Asn Gly Thr Val Arg Leu Leu Ile Gly Asn Ile
 370 375 380
 Thr Val Thr Val Pro Val Asn Leu Pro Leu Leu Gly Thr Asp Asn Leu
 385 390 395 400
 Thr Leu Ser Gly Ser Trp Ser Thr Pro Pro Val Gln Tyr
 405 410

<210> 8474
 <211> 702
 <212> PRT
 <213> B.fragilis

<400> 8474

Thr Leu Pro Ser Leu Phe Ser Val Ser Gly Arg Ser Glu Leu Val Arg
 1 5 10 15
 Thr Phe Tyr Gln Gln Lys Thr Lys Met Asn Ile Leu Arg Leu Pro Lys
 20 25 30
 Leu Leu Tyr Ser Cys Val Ala Phe Cys Cys Cys Gln Ala Leu Thr Val
 35 40 45
 Ser Leu Ser Ala Gln Gln Gln Lys Ala Asp Thr Ala Arg Thr Tyr Ser
 50 55 60
 Ile Pro Glu Val Thr Val Ala Glu Ala Tyr His Thr Ser Glu Val Arg
 65 70 75 80
 Ala Met Ala Pro Thr Gln Val Phe Ser Lys Glu Glu Leu Lys Ser Leu
 85 90 95
 Asn Val Leu Gln Val Ser Asp Ala Val Lys His Phe Ala Gly Val Thr
 100 105 110
 Val Lys Asp Tyr Gly Gly Ile Gly Gly Leu Lys Thr Val Ser Leu Arg
 115 120 125
 Ser Leu Gly Ala Glu His Thr Ala Val Gly Tyr Asp Gly Ile Thr Ile
 130 135 140
 Ser Asp Cys Gln Thr Gly Gln Ile Asp Ile Gly Arg Phe Ser Leu Asp
 145 150 155 160
 Asn Val Asp Arg Leu Ser Leu Ser Asn Gly Gln Ser Asp Asn Ile Phe
 165 170 175
 Gln Pro Ala Arg Phe Phe Ala Ser Ala Gly Ile Leu Asn Ile Gln Thr
 180 185 190
 Leu Thr Pro Gln Phe Lys Asp Asn Arg Arg Thr Asn Leu Ser Ala Ser
 195 200 205
 Phe Lys Thr Gly Ser Trp Gly Leu Val Asn Pro Ser Leu Leu Leu Glu
 210 215 220
 Gln Lys Leu Ser Arg Lys Trp Val Leu Ser Ala Asn Gly Glu Trp Met
 225 230 235 240
 Ser Ala Asp Gly His Tyr Pro Phe Thr Leu His Tyr Gly Glu Asp Asn
 245 250 255
 Asp Leu Thr Ser Arg Glu Lys Arg Lys Asn Thr Glu Val Lys Asn Leu
 260 265 270
 Arg Ala Glu Ala Gly Leu Phe Gly Asn Phe Ser Asp Thr Glu Gln Trp
 275 280 285
 Arg Leu Lys Ala Tyr Tyr Tyr Gln Ser Ser Arg Gly Leu Pro Asn Ala
 290 295 300
 Thr Thr Tyr Tyr Tyr Asp Tyr Ser Ser Gln His Leu Trp Asp Lys Asn
 305 310 315 320
 Val Phe Val Gln Ser Gln Tyr Lys Lys Glu Phe Ser Arg Gln Trp Val

325 330 335
 Phe Gln Thr Ser Ala Lys Trp Asn Trp Ser Tyr Gln Arg Tyr Leu Asp
 340 345 350
 Pro Asp Tyr Lys Gly Ser Glu Gly Lys Thr Glu Asn Ser Tyr Tyr Gln
 355 360 365
 Gln Glu Tyr Tyr Leu Ser Ala Ser Ala Leu Tyr Arg Val Leu Ser Asn
 370 375 380
 Leu Ser Phe Ser Leu Ser Thr Asp Ala Ser Ile Asn Arg Leu Asn Ala
 385 390 395 400
 Asn Leu Lys Asp Phe Ala Tyr Pro Thr Arg Tyr Ser Trp Leu Thr Ala
 405 410 415
 Phe Ala Gly Lys Tyr Val Asn Asp Trp Leu Thr Ala Ser Ala Ser Val
 420 425 430
 Leu Ala Thr Val Ile Asn Glu Glu Val Arg Gln Gly Ser Ala Ala Ala
 435 440 445
 Asn Arg Arg Lys Leu Ser Pro Tyr Val Ser Ala Ser Phe Lys Pro Phe
 450 455 460
 Ala Ser Glu Glu Phe Arg Ile Arg Leu Phe Tyr Lys Asp Ile Phe Arg
 465 470 475 480
 Leu Pro Ser Phe Asn Asp Leu Tyr Tyr Gly Gln Val Gly Asn Thr Asn
 485 490 495
 Leu Lys Pro Glu Ser Thr Thr Gln Tyr Asn Leu Gly Leu Thr Tyr Ser
 500 505 510
 Arg Ser Ile Asn Glu Leu Ile Pro Tyr Val Ser Val Thr Ala Asp Ala
 515 520 525
 Tyr Tyr Asn Lys Val Lys Asp Lys Ile Ile Ala Ile Pro Thr Lys Asn
 530 535 540
 Leu Phe Ile Trp Ser Met Val Asn Leu Gly Lys Val Asp Ile Lys Gly
 545 550 555 560
 Ile Asp Ile Ala Gly Asn Ile Ser Leu Gln Pro Trp Glu Lys Leu Arg
 565 570 575
 Val Asn Leu Ser Gly Asn Tyr Thr Tyr Gln Arg Ala Leu Asp Met Thr
 580 585 590
 Glu Pro Gly Gly Lys Thr Tyr Lys Gln Gln Ile Ala Tyr Thr Pro Arg
 595 600 605
 Val Ser Gly Ser Gly Gln Ala Gly Ile Glu Thr Pro Trp Val Asn Leu
 610 615 620
 Ser Tyr Ser Phe Leu Phe Ser Gly Lys Arg Tyr Met Leu Gly Gln Asn
 625 630 635 640
 Leu Arg Glu Asn Arg Leu Asp Ser Tyr Ser Asp His Ser Val Ser Val
 645 650 655
 Ser Arg Asp Leu Arg Ile Arg Asn Val Asn Thr Ser Leu Thr Val Glu
 660 665 670
 Val Leu Asn Leu Leu Asp Lys Asn Tyr Glu Ile Val Lys Asn Phe Pro
 675 680 685
 Met Pro Gly Arg Ser Val Arg Val Thr Met Lys Val Arg Tyr
 690 695 700

<210> 8475
 <211> 483
 <212> PRT
 <213> B.fragilis

<400> 8475
 Ser Leu Tyr Gly Asp Thr Gly Gly Gly Arg Phe Thr Leu Gln Glu Ile
 1 5 10 15
 Ile Ile Ser Leu Ile Tyr Ile Phe Asn Phe Cys Asn Met Lys Lys Ile
 20 25 30
 Asn Ala Leu Ile Thr Lys Met Cys Phe Ile Ala Leu Cys Ala Leu Pro

35 40 45
 Ile Ile Ile Ser Ser Cys Asn Asp Asp Asp Asp Lys Tyr Tyr Tyr Pro
 50 55 60
 Thr Asn Phe Glu Asn Leu Ser Leu Pro Asn Asp Thr Ile Ile Ala Lys
 65 70 75 80
 Gly Glu Asp Leu Thr Leu Lys Pro Thr Leu Asn Leu Ile Asn Pro Lys
 85 90 95
 Ile Tyr Ser Trp Lys Ile Asp Gly Lys Glu Val Ser Asn Glu Val Asn
 100 105 110
 Tyr Thr Phe Ser Thr Ser Val Gly Lys His Glu Ile Ile Phe Glu
 115 120 125
 Ala Gln Asp Ser Lys Gly Asn Thr Asp Lys Ala Gln Ile Thr Val Asp
 130 135 140
 Val Phe Ala Tyr Tyr Gly Gly Phe Tyr Val Ile Asn Glu Gly Trp Ala
 145 150 155 160
 Gly His Asp Pro Ala Ser Val Asn Tyr Tyr Lys Asp Gly Lys Trp Asn
 165 170 175
 Phe Asn Ile Val Glu Ser Leu Gly Gln Thr Gly Thr Val Gly Val Ile
 180 185 190
 Gln Asp Ser Tyr Met Tyr Ile Val Ala Lys Asp Ala Pro Tyr Leu Thr
 195 200 205
 Gln Ile Glu Leu Ala Asn Phe Asn Ile Thr Lys Gln Leu Ser Thr Glu
 210 215 220
 Ile Glu Glu Gln Leu Asp Tyr Gly Gln Ala Asn Ser Phe Cys Thr Ile
 225 230 235 240
 Asn Glu Thr Thr Gly Ile Leu Thr Ala Ser Arg Gly Ala Tyr Lys Ile
 245 250 255
 Asn Leu Asn Pro Leu Ser Ile Gly Asn Met Leu Pro Gln Leu Asn Ser
 260 265 270
 Glu Ser Ala Asn Gly Asn Gly Cys Lys Asp Ile Leu Lys Ser Gly Asp
 275 280 285
 Tyr Val Phe Val Asn Asn Met Asp Thr Ile Lys Ile Tyr Lys Ser Ser
 290 295 300
 Asp Leu Ser Phe Val Lys Lys Leu Thr Ala Leu Met Lys Thr Gly Phe
 305 310 315 320
 Ala Gln Thr Lys Asp Gly Asn Ile Trp Ala Ala Asn Gly Gln Ser Leu
 325 330 335
 Ile Lys Ile Asp Pro Lys Thr Leu Asp Glu Thr Thr Val Glu Leu Pro
 340 345 350
 Asp Asn Ile Asn Val Phe Tyr Asn Gln Trp Ala Tyr Thr Pro Thr Gly
 355 360 365
 Leu Cys Ala Ser Thr Thr Glu Asn Ala Leu Tyr Ile Val Asn Thr Thr
 370 375 380
 Val Val Pro Gly Ala Tyr Gly Asp Ser Tyr Tyr Gly Lys Asn Ile Tyr
 385 390 395 400
 Lys Tyr Asn Thr Glu Ser Lys Ile Ala Gln Glu Phe Phe Lys Ala Pro
 405 410 415
 Ser Lys Ile Gln Ser Ile Tyr Gly Ala Gly Ile Gln Val Asn Pro Gln
 420 425 430
 Asn Gly Asp Val Tyr Leu Ile Tyr Thr Glu Asp Gly Tyr Gly Ala His
 435 440 445
 Tyr Leu Asn Thr Asn Ile Tyr Val Ala Asp Gly Gln Ser Gly Thr Gln
 450 455 460
 Lys Gln Ile Ile Asp Tyr Thr Gly Lys Tyr Trp Phe Pro Ser Ser Ile
 465 470 475 480
 Val Phe Lys

<211> 239
 <212> PRT
 <213> B.fragilis

<400> 8476

Leu Cys Ser Ile Thr Leu Thr Lys Asn Thr Met Asn Asp Tyr Arg Ile
 1 5 10 15
 Leu Val Val Asp Asp Glu Glu Asp Leu Cys Glu Ile Leu Lys Phe Asn
 20 25 30
 Leu Glu Asn Glu Gly Tyr Glu Val Asp Thr Ala Asn Ser Ala Glu Glu
 35 40 45
 Ala Leu Lys Met Asn Ile Ser Ser Tyr His Leu Leu Leu Asp Val
 50 55 60
 Met Met Gly Glu Ile Ser Gly Phe Lys Met Ala Asn Leu Leu Lys Lys
 65 70 75 80
 Asp Lys Lys Thr Ala Gln Val Pro Ile Ile Phe Ile Thr Ala Lys Asp
 85 90 95
 Thr Glu Asn Asp Thr Val Thr Gly Phe Asn Leu Gly Ala Asp Asp Tyr
 100 105 110
 Ile Ser Lys Pro Phe Ser Leu Arg Glu Val Ile Ala Arg Val Lys Ala
 115 120 125
 Val Leu Arg Arg Thr Ala Thr Ser Asp Thr Glu Lys Ala Pro Glu Gln
 130 135 140
 Leu Cys Tyr Gln Ser Leu Val Ile Asp Ile Thr Lys Lys Lys Val Ser
 145 150 155 160
 Ile Asp Gly Glu Glu Val Pro Leu Thr Lys Lys Glu Phe Glu Ile Leu
 165 170 175
 Phe Leu Leu Leu Gln Asn Lys Gly Arg Val Phe Ser Arg Glu Asp Ile
 180 185 190
 Leu Ser Arg Ile Trp Ser Asp Glu Val Tyr Val Leu Asp Arg Thr Ile
 195 200 205
 Asp Val Asn Ile Thr Arg Leu Arg Lys Lys Ile Gly Thr Tyr Gly Lys
 210 215 220
 Arg Ile Val Thr Arg Leu Gly Tyr Gly Tyr Cys Phe Glu Thr Glu
 225 230 235

<210> 8477
 <211> 400
 <212> PRT
 <213> B.fragilis

<400> 8477

Asn Ile Lys Met Ile Lys Ile Asp Phe Lys Gln Arg Lys Arg Glu Val
 1 5 10 15
 Leu Trp Thr Val Val Ala Leu Phe Phe Ile Ala Ile Gly Val Ser Val
 20 25 30
 Phe Lys Phe Ser Ser Ala Thr Ser Gly Phe Glu Ile Thr Asp Glu Leu
 35 40 45
 Gly Gly Asn Ile Phe Pro Ser Ala Ile Leu Ser Val Ala Thr Thr Asp
 50 55 60
 Ala Gln Val Ile Gln Pro Ala Asp Ser Ile Tyr Leu Gly Asn Pro Lys
 65 70 75 80
 Ser Cys Ile Ala Ile Lys Val Lys Ser Arg Ser Ala Tyr Ser Arg Val
 85 90 95
 Arg Ile Asp Val Ala Glu Thr Pro Phe Ser Arg Ser Val Ser Glu
 100 105 110
 Phe Val Leu Asn Lys Pro Arg Thr Glu Tyr Thr Ile Tyr Pro Asp Ile
 115 120 125
 Ile Trp Asn Tyr Glu Ala Leu Lys Asn Asn Asn Gln Ala Glu Pro Ile

130 135 140
 Ser Val Ala Val Thr Val Glu Met Asn Gly Glu Asp Leu Gly Gln Arg
 145 150 155 160
 Val Arg Thr Phe Ser Val Arg Ser Val Asn Glu Cys Leu Leu Gly Tyr
 165 170 175
 Val Thr Asn Gly Thr Lys Phe His Asp Thr Gly Ile Phe Phe Ala Ala
 180 185 190
 Tyr Val Asn Glu Glu Asn Pro Met Ile Asp Gln Leu Leu Arg Glu Ala
 195 200 205
 Leu Asn Thr Arg Ile Val Asn Arg Phe Leu Gly Tyr Gln Asn Pro Ala
 210 215 220
 Pro Gly Ala Val Asp Lys Gln Val Tyr Ala Leu Trp Asn Val Leu Gln
 225 230 235 240
 Lys Arg Lys Phe Arg Tyr Ser Ser Val Ser Asn Thr Ser Leu Ser Ser
 245 250 255
 Asn Val Val Tyr Ser Gln Arg Val Arg Thr Phe Asp Asp Ala Leu Glu
 260 265 270
 Ser Ser Gln Ile Asn Cys Val Asp Gly Ser Val Leu Phe Ala Ser Leu
 275 280 285
 Leu Arg Ala Ile Asn Ile Glu Pro Ile Leu Val Arg Thr Pro Gly His
 290 295 300
 Met Phe Val Gly Tyr Tyr Thr Asp Asn Ser His Lys Asp Met Asn Phe
 305 310 315 320
 Leu Glu Thr Thr Met Ile Gly Asp Val Asp Leu Asp Asp Phe Phe Pro
 325 330 335
 Asp Glu Gln Leu Asp Ser Thr Met Val Gly Lys Ser Gln Asn Gln Met
 340 345 350
 Ser Leu Leu Thr Phe Glu Lys Ser Lys Gln Tyr Ala Asn Lys Lys Tyr
 355 360 365
 Lys Glu Asn Glu Lys Gly Ile His Ser Gly Lys Leu Asn Tyr Met Phe
 370 375 380
 Leu Glu Ile Ser Lys Asp Val Arg Arg Lys Ile Gln Pro Ile Gly Lys
 385 390 395 400

<210> 8478

<211> 270

<212> PRT

<213> B.fragilis

<400> 8478

Arg Asn Arg Ile Met Asn Leu Thr Asn Tyr His Ser His Thr Leu Tyr
 1 5 10 15
 Cys Asp Gly Arg Ala Gly Met Glu Asp Phe Ile Arg Phe Ala Ile Ser
 20 25 30
 Arg Gly Phe Thr Ser Tyr Gly Ile Ser Ser His Ala Pro Leu Pro Phe
 35 40 45
 Pro Thr His Trp Thr Met Glu Trp Asp Arg Met Asp Asp Tyr Leu Asp
 50 55 60
 Glu Phe Thr Arg Met Lys Glu Lys Tyr Ala Ser Glu Ile Glu Leu Ala
 65 70 75 80
 Val Gly Leu Glu Ile Asp Tyr Leu Asn Glu Asp Ser Asn Pro Ser Val
 85 90 95
 Arg Arg Phe Gln Glu Leu Pro Leu Asp Tyr Arg Ile Gly Ser Val His
 100 105 110
 Leu Leu Tyr Asn Asp Arg Asp Glu Val Val Asp Ile Asp Val Cys Ala
 115 120 125
 Glu Val Phe Arg Asp Ile Val Asp Gln His Phe Gly Gly Asp Leu Asp
 130 135 140
 Arg Val Ile His Leu Tyr Tyr Asp Arg Leu Leu Arg Met Val Glu Leu

145 150 155 160
 Gly Gly Phe Asp Ile Leu Gly His Ala Asp Lys Met His His Asn Ala
 165 170 175
 Ala Cys Tyr Arg Pro Gly Leu Leu Asp Glu Ser Trp Tyr Asp Ala Leu
 180 185 190
 Ile His Asp Tyr Phe Ser Ala Val Ala Ala Lys Gly Tyr Ile Val Glu
 195 200 205
 Ile Asn Thr Lys Ala Leu His His Leu Asn Thr Phe Phe Pro Asn Glu
 210 215 220
 Arg Tyr Phe Pro Leu Leu Lys Glu Leu Gly Val Arg Val Gln Val Asn
 225 230 235 240
 Ser Asp Ser His Tyr Pro Glu Arg Ile Asn Ser Gly Arg Pro Glu Ala
 245 250 255
 Val Phe Ser Thr Ala Arg Lys Asp Gln Arg Arg Cys Arg Glu
 260 265 270

<210> 8479

<211> 472

<212> PRT

<213> B.fragilis

<400> 8479

Tyr Phe Tyr Ser Ile Phe Val Leu Ser His Glu Asn Val Arg His Thr
 1 5 10 15
 Thr Ser Lys Leu Asn Met Glu Asn Lys Lys Gly Gln Pro Thr Thr Glu
 20 25 30
 Ala Ile Phe Arg Gly Ile Gln Ser Gly Lys Val Leu Glu Leu Phe Asp
 35 40 45
 Lys Leu Gln Tyr Gln Ile Ala Ile His Gly Asp Leu Thr Tyr Ser Asp
 50 55 60
 Pro Trp Gly Glu Val His Arg Phe Arg Asp Gln Phe Glu Ser Ala Lys
 65 70 75 80
 Arg Asp Ser Asp Ser Pro Thr Ala Ile Gly Arg Tyr Pro Phe Ala Asp
 85 90 95
 Val Trp Ile Gln Phe Tyr Glu Met Glu Val Lys Asp Tyr Ser Leu Leu
 100 105 110
 Leu Glu Met Cys Leu Met Ala Ser His Ser Arg Thr Ser Val Trp Arg
 115 120 125
 Lys Gly Phe Gly Thr Leu Leu Asp Lys Leu Tyr Gly Lys Ile Pro Leu
 130 135 140
 Val Glu Tyr Glu Gln Ala Leu Glu His Leu Glu His Pro Tyr Ala Leu
 145 150 155 160
 Ser Glu Ile Leu Trp Ala Leu Glu Trp Asp Tyr Arg Asp Gln Glu Val
 165 170 175
 Tyr Leu Lys Phe Ser His Tyr Ile Leu Leu His Leu Leu Pro Leu Leu
 180 185 190
 Thr Pro Arg Asn Ile Thr Phe Leu Tyr Ser Val Arg Glu Trp Phe Gly
 195 200 205
 Ser Thr Ser Asp His Arg Val Leu Val His Cys Tyr Trp Ile Asp
 210 215 220
 Cys Trp Leu Lys His Pro Lys Arg Leu Leu Thr Asp Asp Glu Phe Thr
 225 230 235 240
 Ala Asp Phe Lys Ile Arg Tyr Glu Leu Tyr Arg Leu Cys Asn Phe Leu
 245 250 255
 Ser Tyr Lys Glu Glu Pro Tyr Pro Leu Glu Phe Pro Ile Arg Ala Val
 260 265 270
 Asp Phe Gly Arg Ala Cys Gln Met Gly Leu Leu Ser Glu Asp Thr Leu
 275 280 285
 Met Val Glu Leu Met Asp Arg Pro Leu Ser Pro Val Leu Ile Glu Glu

290 295 300
 Ala Val Asp Phe Phe Tyr Lys Lys Asp Gln Lys Glu Lys Arg Leu Tyr
 305 310 315 320
 Thr Asp Cys Arg Asp Tyr Asp Phe Ser Arg Phe Lys Lys Val Leu Glu
 325 330 335
 Lys Val Thr Glu Arg Ile Leu Asp Ile Glu Leu Glu Arg Gly Glu Ala
 340 345 350
 Cys Thr Asp Val Thr Ser Leu Ala Arg Lys Leu Asp Gly Val Thr Gly
 355 360 365
 Ala Glu Leu Met Ile Arg Leu Leu Ser Leu Met Gly Lys Glu Lys Phe
 370 375 380
 Ile Arg Leu Asp Lys Trp Tyr Tyr Asp Thr Gly Glu Ser Arg Thr Gly
 385 390 395 400
 Met Phe Cys His Leu Met Leu His Cys Ala Pro Ser Pro Thr Asp Thr
 405 410 415
 Pro Asp Trp Leu Lys Met Leu Val Glu Arg Ala Gly Ile Thr Pro Lys
 420 425 430
 Arg Leu Val Glu Met Ala Val Tyr Ser Pro Pro Leu Ala Gly Asp Gly
 435 440 445
 Arg Arg Gly Tyr Arg Met Glu Arg Pro Asp Leu Cys Gly Lys Phe Val
 450 455 460
 Leu Cys Leu His Lys Gly Val Leu
 465 470

<210> 8480

<211> 409

<212> PRT

<213> B.fragilis

<400> 8480

Pro Gln Asn Ser Tyr Phe Met Ser Ser Thr Gln Lys Asn Phe Ala Leu
 1 5 10 15
 Pro Leu Ala Phe Ile Gly Ile Met Phe Phe Ala Ile Gly Phe Ala Leu
 20 25 30
 Gly Ile Asn Ser Val Leu Ile Pro Val Leu Gln Gly Ser Leu Gly Ile
 35 40 45
 Thr Ser Ala Glu Ser Tyr Leu Ile Ile Ala Ala Thr Phe Val Pro Phe
 50 55 60
 Leu Ile Phe Gly Tyr Pro Ala Ser Met Thr Ile Lys Ala Ile Gly Tyr
 65 70 75 80
 Lys His Thr Met Ala Leu Ser Phe Ala Met Phe Ala Val Ala Phe Gly
 85 90 95
 Leu Tyr Ile Pro Ser Ala Ser Gln Glu Ser Phe Pro Leu Phe Leu Val
 100 105 110
 Ala Ser Phe Val Ser Gly Thr Ala Asn Ala Phe Leu Gln Ala Ser Val
 115 120 125
 Asn Pro Tyr Ile Thr Ile Leu Gly Pro Leu Asp Ser Ala Ala Lys Arg
 130 135 140
 Ile Ser Ile Met Gly Ile Cys Asn Lys Leu Ala Trp Pro Ile Pro Pro
 145 150 155 160
 Leu Phe Leu Ala Phe Leu Ile Gly Lys Glu Val Ser Asp Ile Thr Val
 165 170 175
 Ser Asp Leu Phe Thr Pro Phe Tyr Val Ile Ile Ala Ala Phe Ile Ile
 180 185 190
 Leu Gly Ile Ile Ser Leu Met Ala Pro Leu Pro Glu Val Lys Ala Ala
 195 200 205
 Gly Glu Asp Asp Ser Glu Gly Gly Ala Glu Ala Cys Pro Tyr Ala Ala
 210 215 220
 Ser Lys Thr Ser Val Trp Gln Phe Pro His Leu Leu Leu Gly Cys Leu

225 230 235 240
 Ala Leu Phe Leu Tyr Val Gly Val Glu Thr Val Ser Leu Gly Thr Leu
 245 250 255
 Val Asp Tyr Ala Asn Ser Leu His Leu Glu Asn Ala Ala Ala Tyr Ala
 260 265 270
 Trp Ile Ala Pro Ile Gly Ile Val Ile Gly Tyr Ile Cys Gly Ile Ile
 275 280 285
 Phe Ile Pro Lys Tyr Ile Asn Gln Ala Thr Ala Leu Lys Ile Cys Ser
 290 295 300
 Ile Leu Ala Ile Ala Gly Ser Ile Leu Val Val Leu Thr Pro Ala Asp
 305 310 315 320
 Ile Ser Ile Tyr Phe Ile Ala Phe Ile Ala Leu Gly Cys Ser Leu Met
 325 330 335
 Trp Pro Ala Leu Trp Pro Leu Ala Met Ala Asp Leu Gly Lys Phe Thr
 340 345 350
 Lys Ala Gly Ser Ser Leu Leu Ile Met Ala Met Ala Gly Gly Ala Val
 355 360 365
 Ile Pro Thr Leu Phe Gly Tyr Ile Lys Asp Ile Ala Gly Ala Gln Asn
 370 375 380
 Ala Tyr Trp Ile Cys Leu Pro Cys Phe Leu Phe Ile Leu Tyr Tyr Gly
 385 390 395 400
 Met Ala Gly Tyr Lys Ile Arg Thr Lys
 405

<210> 8481

<211> 301

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222>

(31), (32), (33), (34), (35), (36), (37), (38), (39), (40), (41), (42), (43), (44), (45), (46),
 (47), (48), (49), (50), (51), (52), (53), (54), (55), (57), (58), (59), (60), (63), (66), (68),
 (80), (92), (107), (116), (121), (131), (147), (166), (171), (184), (212), (252), (293)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8481

Ala Tyr Thr Phe Ile Phe Lys Val Ser Tyr Arg Phe Leu Cys Thr Leu
 1 5 10 15
 Cys Thr Gly Ser Ile Asp Phe Arg Ser Ala Asp Met Gly Val Xaa Xaa
 20 25 30
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 35 40 45
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Pro Xaa Xaa Xaa Xaa Leu Pro Xaa Pro
 50 55 60
 Phe Xaa Leu Xaa Leu Pro Pro Leu Leu Phe Leu Ser Ser Phe Ser Xaa
 65 70 75 80
 Leu Phe Phe Phe Phe Pro Phe Pro Pro Phe Phe Xaa Leu Phe Phe Phe
 85 90 95
 Leu Pro Phe Pro Leu Ser Ser Pro Phe Phe Xaa Pro Phe Pro Phe Leu
 100 105 110
 Phe Leu Phe Xaa Pro Phe Phe Pro Xaa Pro Leu Leu Phe Ser Phe Phe
 115 120 125
 Pro Phe Xaa Ser Leu Pro Ser Phe Leu Ser Ser Pro Phe Ser Pro Tyr
 130 135 140
 Pro Ser Xaa Phe Phe Leu Phe Leu Phe Pro Pro Leu Phe Pro Ser Pro
 145 150 155 160
 Ser Pro Ser Leu Pro Xaa Phe Leu Leu Pro Xaa Ser Pro Phe Phe Pro

				165					170					175			
Phe	Phe	Pro	Phe	Leu	Pro	Phe	Xaa	Ser	Ser	Phe	Phe	Phe	Phe	Pro	Phe		
			180					185					190				
Phe	Pro	Leu	Phe	Leu	Phe	Phe	Leu	Ser	Pro	Phe	Pro	Phe	Phe	Phe	Ser		
		195					200					205					
Phe	Ser	Leu	Xaa	Phe	Pro	Phe	Phe	Pro	Leu	Leu	Phe	Phe	Ser	Leu	Pro		
	210					215					220						
Phe	Leu	Phe	Leu	Leu	Leu	Phe	Ser	Ser	Phe	Leu	Ser	Ser	Phe	Phe	Phe		
225					230					235					240		
Pro	Pro	Phe	Pro	Phe	Pro	Leu	Pro	Pro	Leu	Leu	Xaa	Leu	Phe	Leu	Pro		
				245					250					255			
Leu	Phe	Ser	Phe	Ser	Phe	Ser	Leu	Phe	Phe	Leu	Ser	Ser	Leu	Ser	Phe		
			260					265					270				
Phe	Leu	Ser	Phe	Pro	Phe	Ser	Leu	Leu	Leu	Ser	Ser	Ser	Phe	Ser	Phe		
		275					280					285					
Leu	Ser	Phe	Ser	Xaa	Leu	Phe	Phe	Phe	Pro	Ser	Leu	Pro					
	290					295					300						

<210> 8482

<211> 254

<212> PRT

<213> B.fragilis

<400> 8482

Thr	Leu	Leu	Pro	Asp	Ser	Leu	Asp	Ile	Gly	Arg	Gln	Ser	Thr	Gln	Ile		
1				5					10					15			
Thr	Phe	Ile	Glu	Ile	Lys	Asn	Ser	Leu	Ser	Leu	Pro	Lys	Ile	Pro	Gln		
			20					25					30				
Met	Lys	Tyr	Thr	Val	Tyr	Leu	Phe	Asp	Phe	Asp	Tyr	Thr	Leu	Ala	Asp		
		35					40					45					
Ser	Ser	Arg	Gly	Ile	Val	Thr	Cys	Phe	Arg	Ser	Val	Leu	Glu	Arg	His		
		50				55					60						
Gly	Tyr	Thr	Gly	Ile	Thr	Asp	Asp	Met	Ile	Lys	Arg	Thr	Ile	Gly	Lys		
65					70				75					80			
Thr	Leu	Glu	Glu	Ser	Phe	Ser	Ile	Leu	Thr	Gly	Ile	Thr	Asp	Ala	Asp		
				85					90					95			
Gln	Leu	Glu	Ser	Phe	Arg	Gln	Glu	Tyr	Ser	Lys	Glu	Ala	Asp	Ile	Tyr		
			100					105					110				
Met	Asn	Ala	Asn	Thr	Ile	Leu	Phe	Pro	Asp	Thr	Leu	Pro	Thr	Leu	Thr		
		115					120					125					
His	Leu	Lys	Lys	Gln	Gly	Ile	Arg	Ile	Gly	Ile	Ile	Ser	Thr	Lys	Tyr		
	130					135					140						
Arg	Phe	Arg	Ile	Leu	Ser	Phe	Leu	Arg	Asn	His	Met	Pro	Asp	Asp	Trp		
145					150				155					160			
Phe	Asp	Ile	Ile	Ile	Gly	Gly	Glu	Asp	Val	Thr	His	His	Lys	Pro	Asp		
				165				170						175			
Pro	Glu	Gly	Leu	Leu	Leu	Ala	Ile	Asp	Arg	Leu	Lys	Ala	Cys	Pro	Glu		
			180					185					190				
Glu	Val	Leu	Tyr	Ile	Gly	Asp	Ser	Thr	Val	Asp	Ala	Gly	Thr	Ala	Ala		
		195				200						205					
Ala	Ala	Gly	Val	Ser	Phe	Thr	Gly	Val	Thr	Ser	Gly	Met	Thr	Thr	Ala		
	210					215					220						
Gln	Glu	Phe	Gln	Ala	Tyr	Pro	Tyr	Asp	Arg	Ile	Ile	Ser	Thr	Leu	Gly		
225					230				235					240			
Gln	Leu	Ile	Ser	Val	Pro	Glu	Asp	Lys	Ser	Gly	Cys	Pro	Leu				
			245					250									

<210> 8483

<211> 144

<212> PRT
 <213> B.fragilis

<400> 8483

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Lys Tyr Met Pro Ile Asn Tyr Val Val Arg Lys Lys Lys Asp Gln Ser
1      5      10      15
Gly Asn Glu Val Lys Glu Leu Tyr Tyr Ala Val Pro Ser Ala Ile Gln
      20      25      30
Asn Lys Gly Val Ser Glu Lys Gln Leu Ala Glu Asp Leu His Asp Asn
      35      40      45
Ser Ser Leu Ser Ala Gly Asp Val Leu Ser Val Leu Glu Gln Leu Pro
      50      55      60
Lys Ala Ile Ala Arg His Met Lys Glu Gly Arg Thr Val Thr Ile Arg
65      70      75      80
Gly Leu Gly Thr Phe Tyr Pro Ala Leu Ser Ser Glu Gly Cys Glu Thr
      85      90      95
Pro Glu Glu Cys Thr Pro Asn Lys Val Arg Leu Thr Arg Ile Cys Phe
      100     105     110
Arg Ala Asp Thr Ala Phe Thr Tyr Asp Val Lys His Cys Glu Phe Glu
      115     120     125
Ser Met Gln Leu Arg Phe Thr Lys Arg Pro Lys Pro Gly Lys Glu Glu
      130     135     140

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<210> 8484
 <211> 140
 <212> PRT
 <213> B.fragilis

<400> 8484

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Trp Arg Trp Pro Val Asn Thr Gly Trp Phe Ile Arg Asp Met Pro Met
1      5      10      15
Ile Leu Pro Phe Arg Val Ile Ile Cys Arg Lys Met Lys Phe Trp Tyr
      20      25      30
Glu Ser Thr Gly Leu Phe Gly Lys Lys Gly Phe Thr Met Asn Val Lys
      35      40      45
Lys Thr Arg Phe Leu Ser Glu His Lys Arg Lys Ile Ile Thr Gly Val
      50      55      60
Ser Val Ser Ser Gly Lys Lys Met Thr Leu Pro Lys Val Lys Lys Arg
65      70      75      80
Glu Ile Arg Lys Asn Val His Tyr Val Leu Thr Lys Gly Leu Val Gly
      85      90      95
His Gln Glu His Ile Gly Ser Thr Asp Pro Val Tyr Leu Lys Arg Leu
      100     105     110
Leu Gly Ser Leu Cys Tyr Trp Arg Ser Ile Glu Pro Asp Asn Arg Tyr
      115     120     125
Val Ser Asp Ser Ile Thr Ala Leu Lys Arg Leu Met
      130     135     140

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<210> 8485
 <211> 187
 <212> PRT
 <213> B.fragilis

<400> 8485

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Phe Glu Tyr Thr Ala Ile Asp Pro Pro Val Lys Thr Ile Gly Ser Ile
1      5      10      15
Pro Ile Ile Ile Asn Leu Lys Glu Lys Gly Lys Asp Val Asn Ala Thr
      20      25      30
Lys Ala Thr Val Ile Ser Phe Ala Leu Met Ile Gly Phe Phe Tyr Ala

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35 40 45
 Gly Asp Phe Met Leu Lys Leu Phe His Val Asp Ile Glu Ser Phe Ala
 50 55 60
 Val Ala Gly Ala Phe Val Ile Phe Leu Met Ser Leu Glu Met Ile Leu
 65 70 75 80
 Asp Val Glu Ile Phe Lys Asn Gln Gly Pro Ile Lys Glu Ala Thr Leu
 85 90 95
 Val Pro Leu Val Phe Pro Leu Leu Ala Gly Ala Gly Ala Phe Thr Thr
 100 105 110
 Leu Leu Ser Leu Arg Ala Glu Tyr Ala Ser Ile Asn Ile Val Ile Ala
 115 120 125
 Leu Ile Leu Asn Met Leu Trp Val Tyr Phe Val Val Ser Met Thr Gly
 130 135 140
 Arg Val Glu Arg Phe Leu Gly Lys Gly Gly Ile Tyr Ile Ile Arg Lys
 145 150 155 160
 Phe Phe Gly Ile Ile Leu Leu Ala Ile Ser Val Arg Leu Phe Thr Ala
 165 170 175
 Asn Ile Thr Leu Leu Ile Ala Ala Leu Gln Lys
 180 185

<210> 8486

<211> 430

<212> PRT

<213> B.fragilis

<400> 8486

Thr Gly Thr Thr Gly Asn Thr Ser Ile Lys Val Met Asn Ile Lys Asn
 1 5 10 15
 Arg Leu Ile Ile Met Asn Phe Leu Gln Phe Phe Val Trp Gly Ser Trp
 20 25 30
 Leu Ile Ser Leu Gly Gly Tyr Met Glu Arg Gly Leu His Phe Glu Gly
 35 40 45
 Gly Gln Ile Gly Ala Ile Phe Ala Thr Met Gly Ile Ala Ser Ile Ile
 50 55 60
 Met Pro Gly Ile Thr Gly Ile Ile Ala Asp Lys Trp Phe Asn Ala Glu
 65 70 75 80
 Arg Leu Tyr Gly Ile Cys His Leu Leu Gly Ala Gly Cys Leu Phe Tyr
 85 90 95
 Ala Ser Thr Ala Thr Asp Tyr Asn Gln Met Tyr Trp Ala Met Leu Leu
 100 105 110
 Asn Leu Met Val Tyr Met Pro Thr Leu Ser Leu Ala Asn Thr Val Ser
 115 120 125
 Tyr Asn Ala Leu Glu Gln Tyr Lys Cys Asp Leu Val Lys Asp Phe Pro
 130 135 140
 Pro Ile Arg Val Trp Gly Thr Ile Gly Phe Ile Cys Ala Met Trp Ala
 145 150 155 160
 Val Asp Leu Thr Gly Phe Lys Asn Ser Ser Ala Gln Leu Tyr Val Gly
 165 170 175
 Ala Ser Ser Ala Leu Leu Leu Gly Leu Tyr Ser Phe Thr Leu Pro Pro
 180 185 190
 Cys Pro Pro Ala Lys Asn Gln Ser Lys Thr Leu Leu Ser Ser Phe Gly
 195 200 205
 Leu Asp Ala Leu Ser Leu Phe Lys Arg Lys Lys Met Ala Ile Phe Phe
 210 215 220
 Phe Phe Ser Met Leu Leu Gly Ala Ala Leu Gln Ile Thr Asn Thr Tyr
 225 230 235 240
 Gly Asp Ala Phe Leu Gly Ser Phe Ala Lys Ile Pro Glu Phe Ala Asp
 245 250 255
 Ser Phe Gly Val Lys His Ser Val Ile Leu Leu Ser Ile Ser Gln Met

4633
 B.fragilis
 8486
 PRT
 430

	260		265		270										
Ser	Glu	Thr	Leu	Phe	Ile	Leu	Ala	Ile	Pro	Phe	Phe	Leu	Lys	His	Phe
	275						280					285			
Gly	Ile	Lys	Arg	Val	Met	Leu	Ile	Ser	Met	Phe	Ala	Trp	Val	Phe	Arg
	290					295					300				
Phe	Gly	Leu	Phe	Gly	Phe	Gly	Asp	Pro	Gly	Ser	Gly	Ile	Trp	Met	Leu
305					310					315					320
Ile	Leu	Ser	Met	Ile	Val	Tyr	Gly	Met	Ala	Phe	Asp	Phe	Phe	Asn	Ile
			325						330					335	
Ser	Gly	Ser	Leu	Phe	Val	Glu	Leu	Glu	Thr	Lys	Pro	Glu	Thr	Arg	Ala
			340					345					350		
Ser	Ala	Gln	Gly	Leu	Phe	Phe	Ile	Met	Thr	Asn	Gly	Leu	Gly	Ala	Val
	355						360					365			
Ile	Gly	Gly	Tyr	Ala	Ser	Gly	Ala	Val	Val	Asp	Ala	Phe	Ser	Val	Tyr
	370					375					380				
Glu	Asn	Gly	Met	Leu	Ala	Ser	Arg	Asn	Trp	Pro	Ala	Ile	Trp	Phe	Ile
385					390					395					400
Phe	Ala	Ala	Tyr	Ala	Leu	Ala	Ile	Gly	Ile	Leu	Phe	Ala	Ile	Val	Phe
			405					410						415	
Arg	Tyr	Lys	His	Gln	Pro	Gly	Glu	Leu	Lys	Lys	Val	Asn	Asn		
		420						425					430		

<210> 8487

<211> 239

<212> PRT

<213> B.fragilis

<400> 8487

His	Ser	Phe	Ala	Thr	Asp	Met	Val	Lys	Met	Asn	Leu	Ser	Glu	Ile	Asn
1				5					10					15	
Val	Pro	Glu	Arg	Ile	Ala	Glu	Met	Trp	Ala	Pro	Leu	Asn	Ala	Glu	Gln
			20					25					30		
Arg	Glu	Phe	Leu	Ala	Asn	Asn	Phe	Thr	Leu	Gln	Asn	Tyr	Lys	Lys	Asn
		35					40					45			
Glu	Thr	Ile	Tyr	Cys	Glu	Gly	Glu	Ser	Pro	Thr	Tyr	Leu	Met	Cys	Leu
	50					55					60				
Leu	Ser	Gly	Lys	Val	Lys	Ile	Tyr	Lys	Asp	Gly	Val	Gly	Gly	Arg	Ser
65					70				75						80
Gln	Ile	Ile	Arg	Met	Ile	Lys	Pro	Thr	Glu	Tyr	Phe	Gly	Tyr	Arg	Ala
				85					90					95	
Tyr	Phe	Ala	Lys	Glu	Asp	Tyr	Val	Thr	Ala	Ala	Ser	Ala	Phe	Glu	Pro
			100					105					110		
Ser	Thr	Ile	Cys	Leu	Ile	Pro	Met	Ser	Ala	Ile	Met	Thr	Leu	Val	Ser
		115					120					125			
Gln	Asn	Asn	Asp	Leu	Gly	Met	Phe	Phe	Ile	Arg	Gln	Leu	Ser	Ile	Asp
	130					135					140				
Leu	Gly	Ile	Ala	Asp	Glu	Arg	Thr	Val	Asn	Leu	Thr	Gln	Lys	His	Ile
145					150					155					160
Arg	Gly	Arg	Leu	Ala	Glu	Ser	Leu	Leu	Phe	Leu	Lys	Glu	Ser	Tyr	Gly
			165						170					175	
Leu	Glu	Glu	Asp	Gly	Ser	Thr	Leu	Ser	Ile	Tyr	Leu	Ser	Arg	Glu	Asp
		180						185					190		
Leu	Ala	Asn	Leu	Ser	Asn	Met	Thr	Thr	Ser	Asn	Ala	Ile	Arg	Thr	Leu
		195					200					205			
Ser	Asn	Phe	Ala	Thr	Glu	Arg	Leu	Ile	Thr	Ile	Asp	Gly	Arg	Lys	Ile
	210					215					220				
Lys	Ile	Ile	Asp	Glu	Glu	Lys	Leu	Lys	Lys	Ile	Ser	Lys	Ile	Gly	
225					230					235					

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<210> 8488
 <211> 251
 <212> PRT
 <213> B.fragilis

<400> 8488

Pro Val Leu Ala Ser Ser Lys Ala Lys Arg Trp Leu Cys Glu Leu Pro
 1 5 10 15
 Glu Lys Ile Val Asn Ile Thr Asp Lys Leu Gly Ile Pro Tyr Val Phe
 20 25 30
 Lys Gly Ser Tyr Arg Lys Ala Asn Arg Ser Arg Leu Asp Ser Phe Met
 35 40 45
 Gly Ile Gly Asp Glu Lys Ala Leu Lys Val Leu Glu Lys Val His Asn
 50 55 60
 Thr Phe Gly Val Pro Thr Val Thr Asp Ile His Ala Ala Asp Glu Ala
 65 70 75 80
 Ala Met Ala Ala Asp Tyr Val Asp Ile Leu Gln Ile Pro Ala Phe Leu
 85 90 95
 Cys Arg Gln Thr Asp Leu Leu Val Ala Ala Ala Gln Thr Gly Lys Thr
 100 105 110
 Ile Asn Ile Lys Lys Gly Gln Phe Leu Ser Pro Leu Ala Met Gln Phe
 115 120 125
 Ala Ala Asp Lys Val Ile Glu Ala Gly Asn Lys Asn Val Met Leu Thr
 130 135 140
 Glu Arg Gly Thr Thr Phe Gly Tyr Gln Asp Leu Val Ile Asp Tyr Arg
 145 150 155 160
 Gly Ile Pro Glu Met Gln Ser Phe Gly Tyr Pro Val Ile Leu Asp Val
 165 170 175
 Thr His Ser Leu Gln Gln Pro Asn Gln Thr Asn Gly Val Thr Gly Gly
 180 185 190
 Met Pro Gln Leu Ile Glu Thr Val Ala Lys Ala Gly Ile Ala Val Gly
 195 200 205
 Ala Asp Gly Leu Phe Ile Glu Thr His Glu Asn Pro Ala Val Ala Lys
 210 215 220
 Ser Asp Gly Ala Asn Met Leu Lys Leu Asp Arg Leu Glu Gly Leu Leu
 225 230 235 240
 Thr Lys Leu Val Lys Ile Arg Glu Ala Ile Met
 245 250

<210> 8489
 <211> 328
 <212> PRT
 <213> B.fragilis

<400> 8489

Glu Phe Asn Ala Cys Phe Ser Leu Pro Phe Ser Tyr Leu Cys Asn Val
 1 5 10 15
 Ile Asn Lys Asp Met Thr Met Pro Asp Tyr Asp Leu Ile Ala Ile Leu
 20 25 30
 Gly Pro Thr Ala Ser Gly Lys Thr Pro Phe Ala Ala Ala Leu Ala Ala
 35 40 45
 Glu Leu Asn Thr Glu Ile Ile Ser Ala Asp Ser Arg Gln Ile Tyr Arg
 50 55 60
 Gly Met Asp Leu Gly Thr Gly Lys Asp Leu Glu Asp Tyr Thr Ile Asn
 65 70 75 80
 Gly Arg Gln Ile Pro Tyr His Leu Ile Asp Ile Ala Asp Pro Gly Tyr
 85 90 95
 Lys Tyr Asn Val Phe Glu Tyr Gln Arg Asp Phe Leu Thr Ala Tyr Glu
 100 105 110

Thr Ile Lys Gln Lys Gly Cys Leu Pro Val Leu Cys Gly Gly Thr Gly
 115 120 125
 Leu Tyr Leu Glu Ser Val Leu Lys Gly Tyr Arg Leu Ile Pro Val Pro
 130 135 140
 Glu Asn Gln Glu Leu Arg Val Arg Leu Ala Glu Lys Ser Leu Glu Glu
 145 150 155 160
 Leu Thr Ala Ile Leu Ser Ser Tyr Lys Thr Leu His Asn Ser Thr Asp
 165 170 175
 Val Asp Thr Val Lys Arg Ala Ile Arg Ala Ile Glu Ile Glu Glu Tyr
 180 185 190
 Tyr Ala Lys Thr Pro Ile Glu Glu Arg Glu Phe Pro Gln Leu Asn Ser
 195 200 205
 Leu Ile Ile Gly Val Asp Ile Asp Arg Glu Leu Arg Arg Glu Lys Ile
 210 215 220
 Thr Arg Arg Leu Lys Gln Arg Leu Asp Asp Gly Met Val Glu Glu Val
 225 230 235 240
 Arg Arg Leu Leu Ala Glu Gly Ile Gln Pro Asp Asp Leu Ile Tyr Tyr
 245 250 255
 Gly Leu Glu Tyr Lys Tyr Leu Thr Leu Tyr Ala Ile Gly Lys Met Thr
 260 265 270
 Tyr Asp Glu Met Phe Thr Gly Leu Glu Thr Ala Ile His Gln Phe Ala
 275 280 285
 Lys Arg Gln Met Thr Trp Phe Arg Gly Met Glu Arg Arg Gly Phe Thr
 290 295 300
 Ile His Trp Val Asp Ala Ser Leu Pro Met Glu Glu Lys Ile Asn Phe
 305 310 315 320
 Val Lys Gln Lys Leu Lys Glu Phe
 325

<210> 8490

<211> 943

<212> PRT

<213> B.fragilis

<400> 8490

Asn Ser Ile Ala Met Lys His Leu Phe Arg Gly Leu Leu Leu Val Ala
 1 5 10 15
 Val Ile Leu Cys Cys Asn Phe Gln Gln Ala Phe Ala Gln Gln Met Pro
 20 25 30
 Pro Ile Pro Ile Asp Lys Asn Val Arg Ile Gly Lys Leu Asp Asn Gly
 35 40 45
 Leu Thr Tyr Tyr Ile Arg Lys Asn Asn Leu Pro Ala Asn Arg Ala Asp
 50 55 60
 Phe Tyr Ile Ala Gln Lys Val Gly Ser Ile Gln Glu Glu Glu Asn Gln
 65 70 75 80
 Arg Gly Leu Ala His Phe Leu Glu His Met Cys Phe Asn Gly Thr Thr
 85 90 95
 His Phe Pro Gly Asp Ala Leu Lys Gln Tyr Leu Glu Arg Ile Gly Val
 100 105 110
 Lys Phe Gly Glu Asn Leu Asn Ala Tyr Thr Ala Ile Asp Glu Thr Val
 115 120 125
 Tyr Asn Ile Ser Asn Val Pro Val Lys Thr Pro Gly Ala Val Asp Ser
 130 135 140
 Cys Leu Leu Ile Leu His Asp Trp Ser Asn Asp Leu Thr Leu Asp Pro
 145 150 155 160
 Lys Glu Ile Asp Lys Glu Arg Gly Val Ile Asn Glu Glu Trp Arg Thr
 165 170 175
 Arg Met Ser Ala Met Met Arg Met Gln Glu Lys Leu Leu Pro Met Met
 180 185 190

Tyr Pro Gly Asp Lys Tyr Ala His Ser Phe Pro Ile Gly Thr Met Asp
 195 200 205
 Val Val Met Asn Phe Lys Pro Gln Thr Leu Arg Asp Tyr Tyr Glu Lys
 210 215 220
 Trp Tyr Arg Pro Asp Leu Gln Gly Ile Val Ile Val Gly Asp Ile Asp
 225 230 235 240
 Val Asp Ala Val Glu Ala Lys Ile Lys Thr Met Phe Ala Asp Ile Pro
 245 250 255
 Ala Gln Pro Asn Ala Ala Glu Arg Ile Tyr Tyr Pro Val Ala Asp Asn
 260 265 270
 Lys Glu Pro Ile Ile Cys Ile Leu Lys Asp Lys Glu Gln Pro His Val
 275 280 285
 Gln Val Leu Leu Phe Asn Lys His Glu Ala Val Pro Asp Asn Gln Lys
 290 295 300
 Gly Asn Val Asp Tyr Leu Ile Gln Gln Tyr Ala Lys Asn Leu Ile Ser
 305 310 315 320
 Ile Met Leu Asn Ala Arg Leu Asn Glu Leu Val Gln Thr Ala Asn Pro
 325 330 335
 Pro Tyr Ile Tyr Ala Gly Ala Asp Asp Ser Asn Phe Phe Val Ala Lys
 340 345 350
 Thr Lys Asp Ala Phe Leu Gly Ile Val Val Cys Lys Glu Asp Ser Ile
 355 360 365
 Glu Asn Gly Ile Ala Ala Met Leu Arg Glu Leu Glu Arg Ala Arg Gln
 370 375 380
 Phe Gly Phe Thr Glu Thr Glu Tyr Asn Arg Ala Arg Ala Glu Tyr Leu
 385 390 395 400
 Arg Gln Leu Glu Ser Ser Tyr Asn Glu Arg Asp Lys Gln Lys Asn Glu
 405 410 415
 Lys Tyr Val Asn Glu Tyr Val Arg His Phe Leu Asp Asn Glu Pro Ile
 420 425 430
 Pro Gly Ile Glu Asn Glu Tyr Thr Ile Ile Asn Gln Ile Ala Pro Asn
 435 440 445
 Ile Pro Val Ala Ala Ile Asn Gln Leu Met Lys Gly Leu Ile Thr Asp
 450 455 460
 Asp Asn Gln Ala Leu Ala Leu Phe Ala Pro Glu Lys Glu Asp Leu Lys
 465 470 475 480
 Leu Pro Ser Glu Ala Ala Ile Ala Lys Leu Leu Lys Asp Ala Lys Thr
 485 490 495
 Glu Lys Leu Thr Ala Tyr Val Asp Lys Val Ser Asp Glu Pro Leu Met
 500 505 510
 Ala Glu Ala Pro Lys Gly Gly Lys Ile Val Ser Glu Ser Lys Asp Asp
 515 520 525
 Ile Phe Gly Ala Thr Thr Leu Thr Leu Ser Asn Gly Val Lys Val Ile
 530 535 540
 Ile Lys Lys Thr Asp Phe Lys Ala Asp Glu Ile Arg Met Lys Gly Val
 545 550 555 560
 Ser Leu Gly Gly Ser Ser Val Phe Pro Asp Ser Glu Ile Ile Asn Ile
 565 570 575
 Asn Gly Leu Asp Ala Val Gly Val Gly Leu Gly Asn Phe Ser Ala
 580 585 590
 Val Asn Leu Glu Lys Val Leu Ala Gly Lys Lys Ala Ser Val Ser Tyr
 595 600 605
 Asp Ile Ala Asn Lys Thr Glu Ser Val Ser Gly Ser Cys Ser Pro Lys
 610 615 620
 Asp Phe Glu Thr Met Met Gln Leu Thr Tyr Leu Thr Phe Thr Ala Pro
 625 630 635 640
 Arg Arg Asp Asp Asp Ala Phe Ala Ser Tyr Lys Asn Arg Asn Lys Ala
 645 650 655
 Ala Leu Lys Asn Gln Glu Leu Asn Pro Asn Val Ala Phe Ser Asp Ser

660 665 670
 Ile Gln Ala Gly Ile Tyr Met Lys His Pro Arg Ile Ile Arg Ile Lys
 675 680 685
 Ala Asp Met Val Asp Gln Met Asp Tyr Asp Lys Ile Leu Ser Met Tyr
 690 695 700
 Gln Asp Arg Phe Lys Asp Ala Ser Asp Phe Thr Phe Ile Phe Val Gly
 705 710 715 720
 Asn Val Asp Val Glu Lys Met Lys Pro Val Ile Ala Glu Tyr Leu Gly
 725 730 735
 Ala Leu Pro Ala Val Asn Arg Lys Glu Thr Phe Lys Asp Asn Lys Ile
 740 745 750
 Glu Met Arg Gln Gly Ile Tyr Lys Asn Glu Phe Thr Lys Gln Gln Glu
 755 760 765
 Thr Pro Lys Ala Ser Val Phe Ala Phe Tyr Asn Gly Asp Cys Lys Tyr
 770 775 780
 Asp Leu Arg Asn Asn Leu Leu Leu Ser Met Thr Ser Gln Ile Leu Asp
 785 790 795 800
 Leu Val Tyr Thr Glu Lys Val Arg Glu Asp Glu Gly Gly Thr Tyr Gly
 805 810 815
 Val Tyr Val Gly Gly Thr Leu Gln Lys Tyr Pro Lys Glu Lys Ala Ile
 820 825 830
 Leu Gln Ile Phe Asp Thr Ala Pro Glu Lys Lys Glu Lys Leu Met
 835 840 845
 Lys Ile Ile Phe Gly Glu Ile Asp Asn Ile Thr Lys Thr Gly Pro Ser
 850 855 860
 Glu Ala Asn Leu Asn Lys Val Lys Glu Tyr Met Leu Lys Lys His Thr
 865 870 875 880
 Glu Asp Leu Lys Glu Asn Ser Tyr Trp Leu Gly Ser Ile Asp Glu Tyr
 885 890 895
 Leu Tyr Thr Gly Met Asn Arg Met Asn Asp Tyr Glu Lys Ile Val Asn
 900 905 910
 Ser Ile Thr Val Asn Asp Ile Arg Lys Phe Ala Asp Asp Leu Phe Lys
 915 920 925
 Gln Lys Asn Glu Val Glu Val Thr Met Val Ser Pro Glu Lys Lys
 930 935 940

<210> 8491
 <211> 91
 <212> PRT
 <213> B.fragilis

<400> 8491
 Glu Glu Met Ala His Lys Lys Gly Val Gly Ser Ser Lys Asn Gly Arg
 1 5 10 15
 Glu Ser Gln Ser Lys Arg Leu Gly Val Lys Ile Phe Gly Gly Glu Ala
 20 25 30
 Cys Lys Ala Gly Asn Ile Ile Val Arg Gln Arg Gly Thr Glu Phe His
 35 40 45
 Pro Gly Glu Asn Ile Gly Met Gly Lys Asp His Thr Leu Phe Ala Leu
 50 55 60
 Val Asp Gly Thr Val Asn Phe Lys Val Gly Arg Glu Asp Arg Arg Tyr
 65 70 75 80
 Val Ser Ile Ile Pro Ala Glu Ala Thr Glu Ala
 85 90

<210> 8492
 <211> 370
 <212> PRT
 <213> B.fragilis

<400> 8492

Asn Ile Gly Ala Gly Ile Cys Thr Phe Val Pro Arg Lys Glu Glu Glu
 1 5 10 15
 Ala Met Lys Asn Arg Lys Arg Ile Ile Arg Tyr Ser Val Leu Gly Thr
 20 25 30
 Leu Ile Ala Leu Val Trp Leu Thr Gln Met Leu Pro Ala Leu Gly Glu
 35 40 45
 Gly Tyr Ala Arg Thr Ala Tyr Pro Val Ile Ser Tyr Ile Leu Ser Gly
 50 55 60
 Phe Ser Asn Ile Ile Pro Phe Ala Leu Gly Asp Leu Phe Ile Ala Leu
 65 70 75 80
 Ser Ile Gly Gly Met Ile Ala Tyr Pro Phe Tyr Ala Arg Ile Arg Leu
 85 90 95
 Lys Leu Ser Trp Lys Lys Ile Leu Arg Arg Asp Val Glu Tyr Leu Leu
 100 105 110
 Trp Ile Tyr Val Trp Phe Tyr Leu Ala Trp Gly Leu Asn Tyr Ser Gln
 115 120 125
 Lys Asn Phe Tyr Glu Arg Thr Gly Ile Pro Tyr Thr Ala Tyr Thr Pro
 130 135 140
 Glu Ile Phe Asn Glu Phe Val Asp Asn Tyr Ile Ser Lys Leu Asn Glu
 145 150 155 160
 Ser Tyr Val Pro Val Asn Arg Ile Asp Lys Glu Val Ile Arg Lys Glu
 165 170 175
 Ala Val Arg Gln Tyr Asn Leu Ile Ser Asp Thr Leu Gly Ile His Arg
 180 185 190
 Pro Thr His Ser Arg Pro Arg Val Lys Thr Met Met Phe Thr Pro Leu
 195 200 205
 Ile Ser Met Val Gly Val Thr Gly Ser Met Gly Pro Phe Phe Cys Glu
 210 215 220
 Phe Thr Leu Asn Gly Asp Leu Leu Pro Pro Gln Tyr Pro Ala Thr Tyr
 225 230 235 240
 Thr His Glu Leu Ala His Leu Leu Gly Ile Thr Ser Glu Ala Glu Ala
 245 250 255
 Asn Phe Tyr Ala Tyr Gln Val Cys Thr Arg Ser Val Asn Lys Glu Ile
 260 265 270
 Arg Phe Ser Gly Tyr Phe Ser Ile Leu Gly His Val Leu Ala Asn Ala
 275 280 285
 Arg Gln Leu Met Thr Glu Glu Glu Tyr Lys Lys Leu Phe Gly Ser Ile
 290 295 300
 Arg Pro Glu Ile Ile Glu Leu Ala Arg Lys Asp Gln Glu Tyr Trp Met
 305 310 315 320
 Ala Lys Tyr Ser Pro Leu Ile Gly Asp Ile Gln Asp Trp Ile Tyr Asp
 325 330 335
 Leu Tyr Leu Lys Gly Asn Lys Ile Glu Ser Gly Arg Lys Asn Tyr Ser
 340 345 350
 Glu Val Ile Gly Leu Leu Ile Ser Tyr Asn Glu Trp Lys Lys Glu Ser
 355 360 365
 Asn Lys
 370

<210> 8493

<211> 340

<212> PRT

<213> B.fragilis

<400> 8493

Thr Ile Ile Tyr His Ile Lys Lys Lys Tyr Arg Lys Leu Met Gln Lys
 1 5 10 15

Lys Thr Lys Glu Ser Pro Lys Gln Gln Asp Asp Leu Ser Leu Lys Asn
 20 25 30
 Lys His Leu Thr Ile His Lys Glu Leu Tyr Arg Gln Arg Thr Cys Phe
 35 40 45
 Asn Ala Arg Phe Phe Leu Tyr Leu Cys Arg Ile Phe Thr Arg Thr Ile
 50 55 60
 Val Ile Met Thr Lys Ala Asn Lys Val Leu Phe Ile Thr Gln Glu Ile
 65 70 75 80
 Thr Pro Tyr Val Ser Glu Ser Glu Met Ala Asn Ile Gly Arg His Leu
 85 90 95
 Pro Gln Ala Ile Gln Glu Lys Gly Arg Glu Ile Arg Thr Phe Met Pro
 100 105 110
 Lys Trp Gly Asn Ile Asn Glu Arg Arg Asn Gln Leu His Glu Val Ile
 115 120 125
 Arg Leu Ser Gly Met Asn Leu Ile Ile Asp Asp Thr Asp His Pro Leu
 130 135 140
 Ile Ile Lys Val Ala Ser Ile Gln Ser Ala Arg Met Gln Val Tyr Phe
 145 150 155 160
 Ile Asp Asn Asp Asp Tyr Phe Gln Asn Arg Leu Gln Thr Ala Asp Glu
 165 170 175
 Asn Gly Val Glu Tyr Asp Asp Asn Asp Ser Arg Ala Ile Phe Tyr Ala
 180 185 190
 Arg Gly Val Leu Glu Thr Val Lys Lys Leu Arg Trp Cys Pro Asp Val
 195 200 205
 Ile His Cys His Gly Trp Met Thr Ala Leu Ala Pro Leu Tyr Ile Lys
 210 215 220
 Lys Ala Tyr Lys Asp Glu Pro Ser Phe Arg Asp Ala Lys Val Val Phe
 225 230 235 240
 Ser Val Tyr Glu Asp Asp Phe Lys Gly Thr Phe Thr Asn Ala Leu Ala
 245 250 255
 Ser Asn Leu Met Leu Lys Gly Ile Asn Lys Lys Asp Val Ala Thr Leu
 260 265 270
 Lys Asp Pro Val Asp Tyr Val Thr Leu Cys Lys Leu Ala Val Asp Tyr
 275 280 285
 Ser Asp Gly Ile Val Gln Asn Ser Glu His Val Asn Glu Asp Val Met
 290 295 300
 Asn Tyr Ala Arg Gln Ser Gly Lys Leu Val Leu Asp Tyr Gln Ala Pro
 305 310 315 320
 Asp Ala Leu Ala Asp Ala Cys Asn Ser Phe Tyr Asp Gln Val Trp Glu
 325 330 335
 Ala Glu Gln Lys
 340

<210> 8494
 <211> 88
 <212> PRT
 <213> B.fragilis

<400> 8494
 Val Phe Leu His Asn Asn Leu Lys Ala Cys Tyr Phe Asp Asn Glu Gly
 1 5 10 15
 Val Ala Thr Glu Leu Cys Pro Val Phe Glu Gly Thr Ile Ser Ala Asp
 20 25 30
 Ser Lys Thr Phe Cys Thr Leu Leu Ile Arg Lys Met Asn Phe Asp Leu
 35 40 45
 Pro Ser Ser Thr Leu Arg Phe Ser Arg Glu Arg Lys Arg Asn Gly Leu
 50 55 60
 Thr Tyr Gly Val Met Tyr Leu Leu Ser Tyr Leu Phe Met Pro Ile Lys
 65 70 75 80

Ala Phe Cys Phe Pro Ser Tyr Leu
85

<210> 8495
<211> 195
<212> PRT
<213> B.fragilis

<400> 8495

Glu Ser Glu Gln Leu Thr Met Asp Lys Lys Val Glu Leu Gln Val Leu
1 5 10 15
Asn Ile Ser Asn Ser Gln Ala Gln Val Gly Ala Tyr Ala Met Val Leu
20 25 30
Gly Glu Val Asp Gly Glu Arg Gln Leu Pro Ile Ile Ile Gly Pro Ala
35 40 45
Glu Ala Gln Ala Thr Ala Ile Cys Leu Lys Gly Ile Lys Ala Pro Arg
50 55 60
Pro Leu Thr His Asp Leu Phe Tyr Ser Cys Leu Asn Val Leu Gly Ala
65 70 75 80
Thr Leu Leu Arg Val Leu Ile Tyr Lys Ala Lys Glu Gly Val Phe Tyr
85 90 95
Ser Tyr Ile Tyr Phe Lys Lys Asp Glu Ile Ile Arg Ile Asp Ala
100 105 110
Arg Thr Ser Asp Ala Val Ala Leu Ala Val Arg Ala Asp Cys Pro Ile
115 120 125
Phe Ile Tyr Glu Ser Ile Leu Glu Arg Glu Cys Ile Arg Leu Thr Asp
130 135 140
Gly Asp Glu Arg Pro Asp Thr Pro Glu Glu Asp Glu Asn Ser Arg Thr
145 150 155 160
Glu Pro Val Ser Ile Ile Ser Leu Glu Glu Ala Leu Asn Lys Ala Ile
165 170 175
Gln Glu Glu Asn Tyr Glu Leu Ala Ala Arg Leu Arg Asp Glu Ile Asn
180 185 190
Arg His Lys
195

<210> 8496
<211> 398
<212> PRT
<213> B.fragilis

<400> 8496

Lys Gln His Asn Lys Phe Met His Lys Val Tyr Leu Lys Pro Gly Lys
1 5 10 15
Glu Asp Ser Leu Lys Arg Phe His Pro Trp Ile Phe Ser Gly Ala Ile
20 25 30
Ala His Phe Asp Gly Glu Pro Glu Glu Gly Glu Val Val Glu Val Tyr
35 40 45
Thr Ser Lys Lys Glu Phe Ile Ala Lys Gly His Phe Gln Ile Gly Ser
50 55 60
Ile Ala Val Arg Val Leu Ser Phe Lys Gln Glu Glu Ile Asn His Asp
65 70 75 80
Phe Trp Lys His Lys Leu Glu Val Ala Tyr Asp Met Arg Arg Ser Ile
85 90 95
Gly Ile Ala Thr Asn Pro Thr Asn Asn Thr Tyr Arg Leu Val His Gly
100 105 110
Glu Gly Asp Asn Leu Pro Gly Leu Val Ile Asp Val Tyr Ala Arg Thr
115 120 125
Ala Val Met Gln Ala His Ser Ala Gly Met His Val Asp Arg Met Ala

130 135 140
 Ile Ala Glu Ala Leu Ser Glu Val Met Gly Asp Gln Ile Glu Asn Ile
 145 150 155 160
 Tyr Tyr Lys Ser Glu Thr Thr Leu Pro Phe Lys Ala Asp Leu Phe Pro
 165 170 175
 Glu Asn Gly Phe Leu Lys Gly Gly Ser Ser Asp Asn Ile Ala Gln Glu
 180 185 190
 Tyr Gly Leu Lys Phe His Val Asp Trp Leu Lys Gly Gln Lys Thr Gly
 195 200 205
 Phe Phe Val Asp Gln Arg Glu Asn Arg Ala Leu Leu Glu Arg Tyr Ala
 210 215 220
 Lys Gly Arg Ser Val Leu Asn Met Phe Cys Tyr Thr Gly Gly Phe Ser
 225 230 235 240
 Phe Tyr Ala Met Arg Gly Gly Ala Lys Gln Val His Ser Val Asp Ser
 245 250 255
 Ser Ala Lys Ala Ile Asp Leu Thr Asn Lys Asn Val Glu Leu Asn Phe
 260 265 270
 Pro Gly Asp Thr Arg His Ala Ala Phe Ala Glu Asp Ala Phe Lys Tyr
 275 280 285
 Leu Asp Arg Met Gly Asp Gln Tyr Asp Leu Ile Ile Leu Asp Pro Pro
 290 295 300
 Ala Phe Ala Lys His Lys Asp Ala Leu Arg Asn Ala Leu Gln Gly Tyr
 305 310 315 320
 Arg Lys Leu Asn Ala Lys Ala Phe Glu Lys Ile Lys Pro Gly Gly Ile
 325 330 335
 Leu Phe Thr Phe Ser Cys Ser Gln Val Val Thr Lys Asp Asn Phe Arg
 340 345 350
 Thr Ala Val Phe Thr Ala Ala Ala Met Ser Gly Arg Ser Val Arg Ile
 355 360 365
 Leu His Gln Leu Thr Gln Pro Ala Asp His Pro Val Asn Ile Tyr His
 370 375 380
 Pro Glu Gly Glu Tyr Leu Lys Gly Leu Val Leu Tyr Val Glu
 385 390 395

<210> 8497

<211> 763

<212> PRT

<213> B.fragilis

<400> 8497

Ile Met Asn Lys Ile Ile Ser Lys Glu His Phe Ser Glu Lys Val Phe
 1 5 10 15
 Lys Leu Val Ile Glu Ala Pro Leu Ile Ala Lys Ser Arg Lys Ala Gly
 20 25 30
 His Phe Val Ile Val Arg Val Gly Glu Lys Gly Glu Arg Met Pro Leu
 35 40 45
 Thr Ile Ala Ala Ala Asp Pro Lys Ala Gly Thr Ile Thr Leu Val Val
 50 55 60
 Gln Glu Val Gly Leu Ser Ser Thr Arg Leu Cys Glu Leu Asn Glu Gly
 65 70 75 80
 Asp Tyr Ile Thr Asp Val Val Gly Pro Leu Gly Gln Ala Thr His Ile
 85 90 95
 Glu Asn Phe Gly Thr Val Val Cys Ala Gly Gly Gly Val Gly Val Ala
 100 105 110
 Pro Met Leu Pro Ile Val Gln Ala Leu Lys Ala Ala Gly Asn Arg Val
 115 120 125
 Ile Thr Val Leu Ala Gly Arg Ser Lys Glu Leu Ile Ile Leu Glu Lys
 130 135 140
 Glu Met Arg Glu Ser Ser Asp Glu Val Ile Ile Met Thr Asp Asp Gly

145 150 155 160
 Ser Tyr Gly Arg Lys Gly Leu Val Thr Glu Gly Val Glu Glu Val Ile
 165 170 175
 Lys Arg Glu Lys Val Asn Lys Cys Phe Ala Ile Gly Pro Ala Ile Met
 180 185 190
 Met Lys Phe Val Cys Leu Leu Thr Lys Lys Tyr Glu Ile Pro Thr Glu
 195 200 205
 Val Ser Leu Asn Thr Ile Met Val Asp Gly Thr Gly Met Cys Gly Ala
 210 215 220
 Cys Arg Ile Thr Ile Gly Lys Thr Lys Phe Val Cys Val Asp Gly
 225 230 235 240
 Pro Glu Phe Asp Gly His Gln Val Asp Phe Asp Glu Met Leu Lys Arg
 245 250 255
 Met Gly Ala Phe Lys Thr Ile Glu Arg Glu Glu Leu His Lys Leu Asp
 260 265 270
 Glu Cys Glu Ala Thr Lys Val Ile Asp Glu Asn Gly Arg Thr Ala Pro
 275 280 285
 Trp Arg Glu Ala Leu Arg Lys Ala Ile Lys Ala Lys Asp Arg Ala Asn
 290 295 300
 Ile Glu Arg Cys Gln Met Asn Glu Leu Asp Pro Glu Tyr Arg Ser His
 305 310 315 320
 Ser Arg Lys Glu Glu Val Asn Gln Gly Leu Thr Lys Glu Gln Ala Val
 325 330 335
 Thr Glu Ala Gln Arg Cys Leu Asp Cys Ala Asn Pro Gly Cys Met Thr
 340 345 350
 Gly Cys Pro Val Gly Ile Asp Ile Pro Arg Phe Ile Lys Asn Ile Glu
 355 360 365
 Arg Gly Glu Phe Leu Glu Ala Ala Lys Thr Leu Lys Glu Thr Ser Ala
 370 375 380
 Leu Pro Ala Val Cys Gly Arg Val Cys Pro Gln Glu Lys Gln Cys Glu
 385 390 395 400
 Ser Lys Cys Ile His Leu Lys Met Gly Lys Glu Ala Val Ala Ile Gly
 405 410 415
 His Leu Glu Arg Phe Ala Ala Asp Tyr Glu Arg Glu Ser Gly Gln Ile
 420 425 430
 Ser Val Pro Glu Val Gly Glu Lys Asn Gly Ile Lys Val Ala Val Ile
 435 440 445
 Gly Ser Gly Pro Ala Gly Leu Ser Phe Ala Gly Asp Met Ala Lys Tyr
 450 455 460
 Gly Tyr Asp Val Thr Val Phe Glu Ala Leu His Glu Ile Gly Gly Val
 465 470 475 480
 Leu Lys Tyr Gly Ile Pro Glu Phe Arg Leu Pro Asn Lys Ile Val Asp
 485 490 495
 Val Glu Ile Glu Asn Leu Ala Lys Met Gly Val Thr Phe Ile Lys Asp
 500 505 510
 Cys Ile Val Gly Lys Thr Ile Ser Val Glu Gln Leu Glu Glu Glu Gly
 515 520 525
 Phe Lys Gly Ile Phe Val Ala Ser Gly Ala Gly Leu Pro Asn Phe Met
 530 535 540
 Asn Ile Pro Gly Glu Asn Ser Ile Asn Ile Met Ser Ser Asn Glu Tyr
 545 550 555 560
 Leu Thr Arg Val Asn Leu Met Asp Ala Ala Ser Pro Asp Ser Asp Thr
 565 570 575
 Pro Val Ala Phe Gly Lys Asn Val Ala Val Ile Gly Gly Gly Asn Thr
 580 585 590
 Ala Met Asp Ser Val Arg Thr Ala Lys Arg Leu Gly Ala Glu Arg Ala
 595 600 605
 Met Ile Ile Tyr Arg Arg Ser Glu Glu Glu Met Pro Ala Arg Leu Glu
 610 615 620

145 150 155 160
 165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235 240
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395 400
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475 480
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555 560
 565 570 575
 580 585 590
 595 600 605
 610 615 620

Glu Val Lys His Ala Lys Glu Glu Gly Ile Glu Phe Leu Thr Leu His
 625 630 635 640
 Asn Pro Ile Glu Tyr Leu Ala Asp Glu Gln Gly Arg Val Lys Gln Val
 645 650 655
 Ile Leu Gln Lys Met Glu Leu Gly Glu Pro Asp Ala Ser Gly Arg Arg
 660 665 670
 Ser Pro Val Pro Ile Pro Gly Ala Thr Glu Thr Val Asp Ile Asp Leu
 675 680 685
 Ala Ile Val Ser Val Gly Val Ser Pro Asn Pro Ile Val Pro Ser Ser
 690 695 700
 Ile Lys Gly Leu Glu Leu Gly Arg Lys Gly Thr Ile Thr Val Asn Asp
 705 710 715 720
 Gln Met Gln Ser Ser Ile Pro Thr Ile Tyr Ala Gly Gly Asp Ile Val
 725 730 735
 Arg Gly Gly Ala Thr Val Ile Leu Ala Met Gly Asp Gly Arg Arg Ala
 740 745 750
 Ala Ala Ala Met Asn Glu Gln Leu Ser Ser Lys
 755 760

<210> 8498

<211> 507

<212> PRT

<213> B.fragilis

<400> 8498

Thr Lys Ile Asn Lys Asn Leu Asp Thr Thr Ile Met Lys Ala Lys Tyr
 1 5 10 15
 Val Trp Val Ala Leu Leu Ala Leu Thr Phe Phe Gly Cys Asp Asp Asn
 20 25 30
 Thr Gly Thr Ile Gly Trp Asp Met Leu Pro Asp Ser Asp Gln Asn Ile
 35 40 45
 Asn Gly Arg Tyr Thr Thr Tyr Glu Leu Thr Thr Asn Ser Asp Leu Ser
 50 55 60
 Gly Pro Val Phe Ala Lys Thr Ser Val Gly Tyr Val Gly Lys Phe Thr
 65 70 75 80
 Asp Lys Glu Phe Gly Glu Tyr Glu Ala Ser Phe Leu Ala Gln Leu Asn
 85 90 95
 Ser Pro Asp Gly Ile Ser Phe Pro Ser Val Tyr Asp Pro Glu Thr Asn
 100 105 110
 Pro Lys Gly Val Met Ala Gly Asp Ser Ile His Thr Ala Glu Leu Ile
 115 120 125
 Leu Tyr Tyr Lys Ser Tyr Phe Gly Asp Ser Ile Asn Pro Cys Arg Met
 130 135 140
 Thr Val Tyr Glu Leu Asp Glu Asn Leu Thr Gln Asn Tyr Tyr Thr Asp
 145 150 155 160
 Ile Asp Pro Leu Lys Tyr Tyr Asn Pro Asn Asn Leu Leu Ala Arg Lys
 165 170 175
 Ala Tyr Thr Ala Val Asp Gln Ser Leu Ser Asp Ser Ile Arg Asn Ser
 180 185 190
 Asp Asp Phe Tyr Pro Asn Val Arg Leu Thr Ser Glu Glu Ile Thr Lys
 195 200 205
 Leu Gly Lys Arg Ile Tyr Arg Leu Asn Arg Asp His Pro Glu Tyr Phe
 210 215 220
 Lys Thr Ser Glu Ala Phe Ile Asn Asn Val Phe Lys Gly Ile Tyr Ala
 225 230 235 240
 Lys Asn Asp Tyr Gly Asn Gly Thr Ile Leu Tyr Val Asp Gln Ile Asn
 245 250 255
 Leu Asn Val Val Ile Arg Cys His Glu Lys Asp Ser Leu Gly Asn Asn
 260 265 270

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 99
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Leu Lys Lys Lys Asn Gly Ala Asp Ser Leu Tyr Tyr Thr Thr Arg Thr
 275 280 285
 Phe Ala Thr Thr Lys Glu Val Ile Gln Ala Asn Lys Phe Val Asn Ser
 290 295 300
 Glu Lys Leu Asn Glu Ile Ala Lys Lys Thr Asp Cys Thr Tyr Leu Lys
 305 310 315 320
 Ser Pro Ala Gly Ile Phe Thr Gln Ala Thr Leu Pro Ile Asn Lys Ile
 325 330 335
 Tyr Glu Glu Leu Ser His Asp Thr Ile Asn Ala Val Lys Leu Thr Phe
 340 345 350
 Asn Ser Tyr Asn Gln Pro Asp Asn Gly Lys Phe Ser Met Lys Ala Pro
 355 360 365
 Thr Tyr Val Leu Leu Leu Arg Glu Lys Glu Arg Gln Ser Phe Phe Glu
 370 375 380
 Glu Asn Lys Leu Thr Asp Asn Ile Thr Ser Tyr Leu Ala Val His Asn
 385 390 395 400
 Ala Ile Ile Ser Asn Lys Pro Thr Thr Asn Gln Tyr Val Phe Thr Asn
 405 410 415
 Leu Thr Arg Leu Ile Asn Ala Cys Val Asn Glu Lys Gln Glu Ala Lys
 420 425 430
 Lys Lys Ala Gly Asp Ser Trp Asn Glu Ala Ala Trp Glu Ala Ala Asn
 435 440 445
 Pro Asp Trp Asn Lys Val Val Leu Ile Pro Val Leu Val Gln Tyr Asp
 450 455 460
 Ser Ser Ser Asn Lys Asn Met Ile Ser Ile Gln His Asp Leu Gln Pro
 465 470 475 480
 Gly Tyr Val Lys Leu Glu Gly Gly Pro Asp Gly Thr Lys Leu Lys Leu
 485 490 495
 Glu Val Thr Tyr Thr Asn Phe Asn Gly Lys Gln
 500 505

<210> 8499

<211> 305

<212> PRT

<213> B.fragilis

<400> 8499

Lys Met Glu Lys Phe Glu Leu His Ile Leu Gly Cys Gly Ser Ala Leu
 1 5 10 15
 Pro Thr Thr Arg His Phe Ala Thr Ser Gln Val Val Asn Leu Arg Asp
 20 25 30
 Lys Leu Phe Met Ile Asp Cys Gly Glu Arg Ala Gln Met Gln Leu Arg
 35 40 45
 Lys Ser Arg Leu Lys Phe Ser Arg Leu Asn His Ile Phe Ile Ser His
 50 55 60
 Leu His Gly Asp His Cys Phe Gly Leu Met Gly Leu Ile Ser Thr Phe
 65 70 75 80
 Gly Leu Leu Gly Arg Thr Ala Glu Leu His Ile His Ser Pro Lys Gly
 85 90 95
 Leu Glu Glu Leu Leu Thr Pro Met Leu Asn Phe Phe Cys His Thr Leu
 100 105 110
 Ala Tyr Lys Val Ile Phe His Glu Phe Asp Thr Arg Gln Thr Ser Val
 115 120 125
 Val Tyr Glu Asp Arg Ser Met Thr Val Thr Thr Ile Pro Leu Gln His
 130 135 140
 Arg Ile Pro Cys Cys Gly Phe Leu Phe Ala Glu Lys Ala Arg Pro Asn
 145 150 155 160
 His Ile Ile Arg Asp Met Val Asp Phe Tyr Lys Val Pro Val Tyr Glu
 165 170 175

Leu Asn Arg Ile Lys Asn Gly Ser Asp Tyr Val Thr Pro Glu Gly Glu
 180 185 190
 Val Ile Ala Asn Thr Arg Leu Thr Arg Pro Ser Asp Pro Pro Arg Lys
 195 200 205
 Tyr Ala Tyr Cys Ser Asp Thr Ile Phe Arg Pro Glu Ile Val Glu Gln
 210 215 220
 Leu Ser Gly Val Asp Leu Leu Phe His Glu Ala Thr Phe Ala Glu Ser
 225 230 235 240
 Glu Leu Ala Arg Ala Lys Glu Thr Tyr His Thr Thr Ala Ala Gln Ala
 245 250 255
 Ala Arg Ile Ala Leu Glu Ala Gly Val Arg Gln Leu Val Ile Gly His
 260 265 270
 Phe Ser Ala Arg Tyr Glu Asp Glu Ser Ile Leu Leu Lys Glu Ala Ser
 275 280 285
 Ala Val Phe Pro Asn Thr Ile Leu Ala Lys Glu Asn Leu Cys Ile Ser
 290 295 300
 Leu
 305

<210> 8500
 <211> 159
 <212> PRT
 <213> B.fragilis

<400> 8500
 Ser Glu Met Lys Lys Leu Ile Ile Leu Leu Ile Ile Val Cys Gly Phe
 1 5 10 15
 Thr Pro Ala Leu Arg Ala Val Gly Ser Pro Asn Gln His Leu Ser Pro
 20 25 30
 Lys Glu Phe Arg Ala Lys Gln Gln Ala Phe Ile Thr Glu Lys Ala Gly
 35 40 45
 Leu Thr Gln Glu Glu Ala Ala Lys Phe Phe Pro Val Tyr Phe Glu Leu
 50 55 60
 Gln Asp Arg Lys Lys Gln Leu Asn Asp Glu Ala Trp Lys Leu Leu Arg
 65 70 75 80
 Ser Gly Lys Asp Glu Lys Thr Thr Asp Thr Gln Tyr Gly Glu Ile Leu
 85 90 95
 Glu Gly Val Tyr Asp Ala Arg Ile Ala Ser Asp Arg Leu Asp Lys Thr
 100 105 110
 Tyr Phe Glu Lys Phe Lys Lys Ile Leu Ser Cys Lys Lys Ile Tyr Leu
 115 120 125
 Val Gln Arg Ala Glu Met Arg Phe His Arg Glu Leu Leu Lys Gly Val
 130 135 140
 Arg Asp Asn Lys Gly Gly Asn Glu Arg Pro Gln Gly Lys Arg Lys
 145 150 155

<210> 8501
 <211> 232
 <212> PRT
 <213> B.fragilis

<400> 8501
 Asn Leu Lys Lys Tyr Ala Asn Met Arg Pro Glu Ile Arg Gln Ile Leu
 1 5 10 15
 Leu Thr Met Val Leu Pro Leu Phe Leu Ile Phe Ile Leu Tyr Met Ile
 20 25 30
 Lys Val Leu Glu Ile Gly Met Asp Trp Asp Phe Ile Ser Leu Gly Val
 35 40 45
 Tyr Pro Leu Ser Lys Lys Gly Met Phe Gly Ile Phe Thr His Pro Leu

50		55		60
Ile His Ser Ser Phe Lys His Leu Leu Thr Asn Thr Leu Pro Leu Phe				
65		70		75
Phe Leu Ser Trp Cys Leu Phe Tyr Phe Tyr Arg Ser Ile Ala Pro Ser				80
	85		90	95
Ile Phe Leu Ile Ile Trp Ile Gly Cys Gly Ala Ile Thr Phe Leu Ile				
	100		105	110
Gly Lys Pro Ala Trp His Ile Gly Ala Ser Gly Ile Ile Tyr Gly Leu				
	115		120	125
Ala Phe Phe Leu Phe Phe Ser Gly Leu Leu Arg Lys Tyr Ile Pro Leu				
	130		135	140
Ile Ala Ile Ser Leu Leu Val Thr Phe Leu Tyr Gly Gly Leu Ile Trp				
145		150		155
Asn Met Leu Pro Tyr Phe Thr Pro Ser Gly Ile Ser Trp Glu Gly His				160
	165		170	175
Leu Ser Gly Ala Ile Ile Gly Thr Ile Cys Ala Phe Ser Phe Met Gly				
	180		185	190
Tyr Gly Pro Gln Lys Pro Asp Pro Phe Ala Asn Glu Gln Glu Glu Glu				
	195		200	205
Ser Val Ser Ala Thr Asp Glu Thr Asp Asn Ile Glu Met Asp Lys Glu				
	210		215	220
Glu Glu His Glu Ile Asp Ala Glu				
225		230		

<210> 8502

<211> 263

<212> PRT

<213> B.fragilis

<400> 8502

Arg Gly Glu Lys Gly Lys Arg Arg Glu Arg Arg Lys Lys Glu Lys Lys				
1	5	10	15	
Arg Arg Arg Lys Glu Glu Glu Lys Lys Gly Lys Lys Glu Lys Lys Arg				
	20	25	30	
Glu Arg Lys Glu Lys Arg Glu Arg Lys Lys Lys Arg Lys Gly Gly Glu				
	35	40	45	
Lys Glu Lys Glu Glu Gly Glu Glu Arg Gly Lys Gly Glu Arg Arg				
	50	55	60	
Arg Arg Lys Gly Lys Arg Lys Arg Glu Glu Gly Lys Gly Arg Glu Gly				
65	70	75	80	
Lys Arg Lys Glu Glu Gly Lys Lys Gly Arg Lys Glu Lys Arg Arg Lys				
	85	90	95	
Lys Lys Glu Arg Glu Arg Gly Lys Lys Glu Lys Gly Gly Lys Lys Glu				
	100	105	110	
Lys Lys Arg Lys Lys Lys Arg Lys Glu Glu Lys Gly Arg Lys Glu Lys				
	115	120	125	
Lys Glu Lys Arg Glu Glu Gly Lys Lys Gly Glu Lys Gly Arg Glu Arg				
	130	135	140	
Glu Arg Glu Glu Gly Arg Glu Lys Gly Arg Arg Arg Asp Lys Glu				
145	150	155	160	
Lys Lys Glu Arg Lys Gly Arg Lys Glu Gly Lys Arg Lys Gly Arg Arg				
	165	170	175	
Arg Lys Gly Gly Glu Lys Glu Arg Lys Glu Arg Lys Gly Arg Glu Lys				
	180	185	190	
Glu Arg Gly Lys Lys Lys Glu Lys Lys Gly Glu Arg Gly Gly Lys Lys				
	195	200	205	
Arg Gly Arg Lys Arg Gly Gly Arg Gly Lys Arg Lys Arg Gly Lys Arg				
	210	215	220	
Arg Lys Arg Glu Arg Glu Gly Gly Gly Gly Glu Gly Arg Arg Gly Arg				

[illegible]

<400> 8503

Gln	Asn	Ile	Glu	Ile	Met	Asn	Asn	Leu	Val	Trp	Lys	Leu	Leu	Arg	Gln
1				5					10					15	
His	Ile	Ser	Ile	Gly	Gln	Leu	Thr	Gly	Phe	Phe	Phe	Ala	Asn	Leu	Phe
			20					25					30		
Gly	Met	Val	Ile	Val	Leu	Leu	Ser	Ala	Gln	Phe	Tyr	Lys	Asp	Val	Val
		35					40					45			
Pro	Ile	Phe	Thr	Glu	Gly	Asp	Ser	Phe	Met	Lys	Lys	Asp	Tyr	Met	Thr
	50					55					60				
Ala	Thr	Lys	Lys	Ile	Ser	Thr	Leu	Gly	Ser	Phe	Ala	Gly	Lys	Ser	Asn
65					70					75					80
Thr	Phe	Ser	Ser	Glu	Ile	Glu	Glu	Leu	Lys	Lys	Gln	Pro	Phe	Thr	
				85				90					95		
Arg	Ser	Val	Gly	Ala	Phe	Thr	Pro	Ser	Gln	Phe	Lys	Val	Ser	Ala	Gly
			100					105					110		
Leu	Gly	Met	Gln	Glu	Ala	Gly	Ile	His	Leu	Ser	Thr	Glu	Met	Phe	Phe
		115					120					125			
Glu	Ala	Val	Pro	Asp	Lys	Phe	Val	Asp	Val	Ser	Leu	Asp	Lys	Trp	His
	130					135					140				
Phe	Asp	Glu	Asn	Thr	His	Thr	Ile	Pro	Ile	Ile	Ile	Pro	Arg	Asn	Tyr
145					150					155					160
Leu	Asn	Leu	Tyr	Asn	Phe	Gly	Phe	Ala	Gln	Ser	Arg	Ser	Leu	Pro	Lys
				165				170						175	
Leu	Ser	Glu	Gly	Leu	Met	Ser	Leu	Ile	Gln	Met	Asp	Ile	Leu	Met	Arg
			180					185					190		
Gly	Asn	Gly	Arg	Val	Glu	Gln	Tyr	Lys	Gly	Asn	Ile	Val	Gly	Phe	Ser
		195					200					205			
Asn	Arg	Leu	Asn	Thr	Ile	Leu	Val	Pro	Gln	Ser	Phe	Met	Asn	Trp	Ala
	210					215					220				
Asn	Gln	Asn	Phe	Ala	Pro	Asp	Ser	Gln	Pro	Asp	Pro	Ser	Arg	Leu	Ile
225					230					235					240
Ile	Glu	Val	Asp	Asn	Pro	Ala	Asp	Ala	Ser	Ile	Ala	Lys	Tyr	Phe	Gln
				245				250						255	
Gln	Lys	Gly	Tyr	Glu	Thr	Glu	Asp	Gly	Lys	Leu	Asp	Ala	Gly	Lys	Thr
			260					265					270		
Thr	Tyr	Phe	Leu	Arg	Leu	Ile	Val	Gly	Ile	Val	Leu	Ala	Val	Gly	Leu
		275					280					285			
Phe	Ile	Ser	Ile	Leu	Ser	Phe	Tyr	Ile	Leu	Met	Leu	Ser	Ile	Phe	Leu
	290					295					300				
Leu	Leu	Gln	Lys	Asn	Thr	Val	Lys	Leu	Glu	Ser	Leu	Leu	Leu	Ile	Gly
305					310					315					320
Tyr	Ser	Pro	Ser	Arg	Val	Ala	Leu	Pro	Tyr	Gln	Ile	Leu	Thr	Leu	Gly
				325					330					335	
Leu	Asn	Ile	Val	Val	Leu	Leu	Leu	Ser	Val	Gly	Ile	Val	Ser	Trp	Ala
			340					345					350		
Arg	Thr	Ser	Tyr	Leu	Thr										

370 375 380
 Leu Val Ser Ser Ile Asn Val Ile Ile Leu Lys Lys Lys Met Leu Ser
 385 390 395 400
 Ile Trp Ile His Lys Ala
 405

<210> 8504
 <211> 389
 <212> PRT
 <213> B.fragilis

<400> 8504
 Thr Ile Thr Glu Met Lys Gln Thr Lys Thr Ile Leu Ala Val Ile Leu
 1 5 10 15
 Leu Val Val Leu Val Gly Cys Gly Glu Asn Ile Gln Ser Asn Asn Asp
 20 25 30
 Leu Ile Ile Val Asp Val Ser Lys Ser Tyr Pro Lys Lys Glu Leu Ile
 35 40 45
 Leu Gln Asp Phe Met Asp Val Glu Tyr Val Ala Leu Glu Thr Thr Asp
 50 55 60
 Glu Phe Leu Thr Gln Gly Leu Val Gln Asp Val Gly Lys Glu Tyr Ile
 65 70 75 80
 Leu Ala Thr Asn Arg Asn Asn Asp Gly Asp Ile Phe Ile Phe Asp Arg
 85 90 95
 Lys Thr Gly Lys Gly Val Arg Lys Ile Asn Arg Arg Gly Gln Gly Ala
 100 105 110
 Glu Glu Tyr Ala Arg Ile Asn Glu Ile Ile Leu Asp Glu Asn Asn Gly
 115 120 125
 Glu Ile Phe Val Lys Ser Pro Gly Asn Lys Ile Leu Val Tyr Asp Leu
 130 135 140
 Tyr Gly Lys Phe Lys Arg Cys Leu Ser Leu Asp Arg Glu Val Ser Ser
 145 150 155 160
 Ile Phe Asp Tyr Asp Lys Asp Asn Leu Ile Cys Tyr Asp Met Ser Asp
 165 170 175
 Tyr His Ser Lys Gly Glu Asp Arg Thr Lys Ser Tyr His Ile Ile Leu
 180 185 190
 Ser Lys Gln Asp Gly Ser Ile Thr Arg Asp Ile Phe Ile Pro Phe Lys
 195 200 205
 Thr Ile Asp Thr Pro Ile Val Asn Asp Gly Asp Arg Phe Ile Ala Asn
 210 215 220
 Tyr Ser Tyr Gln Ile Arg Leu Ser Asn Gly Lys Cys Thr Leu Met Asp
 225 230 235 240
 Thr Ser Ala Asp Thr Leu Tyr Asn Tyr Ala Ser Asp Gly Thr Leu Ser
 245 250 255
 Pro Phe Val Val Arg Thr Pro Ser Ala His Thr Met Glu Pro Glu Val
 260 265 270
 Phe Leu Tyr Met Gly Ile His Thr Asp Arg Tyr Tyr Phe Met Glu Ala
 275 280 285
 Val Lys Asn Val Phe Asn Phe Glu Lys Gly Asn Gly Phe Tyr Ala Asp
 290 295 300
 Glu Leu Val Tyr Asp Lys Glu Glu Lys Ala Val Phe Gln Val Thr Ile
 305 310 315 320
 Tyr Asn Asp Asp Tyr Val Asp Lys Arg Thr Val Ala Met Thr Ala Lys
 325 330 335
 Pro Ile Asn Arg Glu Ile Glu Asp Val Thr Ser Leu Asn Ala Ala Arg
 340 345 350
 Leu Val Glu Ile Tyr Lys Lys Asp Gln Leu Lys Asp Gly Lys Leu Lys
 355 360 365
 Glu Ile Ala Ser Arg Leu Asn Glu Glu Asp Asn Pro Val Ile Met Leu

370
Val Lys Gln Lys Lys
385

375

380

<210> 8505
<211> 176
<212> PRT
<213> B.fragilis

<400> 8505

Lys	Lys	Asn	Glu	Cys	Met	Lys	Lys	Tyr	Leu	Phe	Asn	Leu	Leu	Leu	Phe
1				5					10					15	
Thr	Val	Leu	Val	Ile	Gly	Leu	Ser	Gly	Cys	Arg	Thr	Ser	Ala	Pro	Lys
		20						25					30		
Leu	Asp	Tyr	Lys	Lys	Leu	Ala	Arg	Ala	Ser	Val	Arg	Leu	Gly	Val	Asp
		35					40					45			
Ile	Gly	Met	Glu	Asp	Asn	His	Lys	Leu	Tyr	Leu	Glu	Ala	Ala	Glu	Trp
		50				55					60				
Ile	Gly	Thr	Pro	Tyr	Arg	Gly	Gly	Gly	Glu	Thr	Lys	Arg	Gly	Thr	Asp
65					70					75					80
Cys	Ser	Gly	Met	Thr	Cys	Gln	Ile	Tyr	Lys	Lys	Val	Tyr	His	Ile	Lys
				85					90					95	
Leu	Gln	Arg	Ser	Thr	Asp	Gly	Gln	Lys	Lys	Glu	Ser	Ser	Lys	Val	Ala
			100					105					110		
Arg	Arg	Asn	Leu	Arg	Glu	Gly	Asp	Leu	Val	Phe	Phe	Ser	Ser	Arg	Lys
		115					120						125		
Ser	Arg	Arg	Lys	Val	Ala	His	Val	Gly	Ile	Tyr	Leu	Lys	Asp	Gly	Lys
		130				135					140				
Phe	Val	His	Ala	Ser	Thr	Ser	Gln	Gly	Val	Ile	Val	Ser	Ser	Leu	Asn
145					150					155					160
Glu	Pro	Tyr	Tyr	Arg	Thr	His	Trp	Ile	Ser	Gly	Gly	Arg	Val	Arg	Lys
				165					170					175	

<210> 8506
<211> 466
<212> PRT
<213> B.fragilis

<400> 8506

Asn	Asn	Ile	Asp	Met	Arg	Thr	Ile	Cys	Leu	Tyr	Phe	Glu	Ile	His	Gln
1				5					10					15	
Ile	Ile	His	Leu	Lys	Arg	Tyr	Arg	Phe	Phe	Asp	Ile	Gly	Ala	Asp	His
		20						25					30		
Tyr	Tyr	Tyr	Asp	Asp	Tyr	Ala	Asn	Glu	Thr	Gly	Ile	Asn	Glu	Val	Ala
		35					40					45			
Glu	Arg	Ser	Tyr	Ile	Pro	Ala	Leu	Asn	Thr	Leu	Ile	Glu	Met	Val	Lys
		50				55					60				
Asn	Ser	Gly	Gly	Ala	Phe	Lys	Val	Ala	Leu	Ser	Ile	Ser	Gly	Val	Ala
65				70					75						80
Leu	Glu	Gln	Leu	Glu	Ile	His	Ala	Pro	Ala	Val	Ile	Asp	Leu	Leu	His
				85					90					95	
Ile	Leu	Asn	Asp	Thr	Gly	Cys	Cys	Glu	Phe	Leu	Ala	Glu	Pro	Tyr	Ser
			100					105					110		
His	Gly	Leu	Ser	Ser	Leu	Ala	Asn	Glu	Asp	Cys	Phe	Arg	Glu	Glu	Val
		115					120					125			
Met	Arg	Gln	Ser	Glu	Lys	Met	Lys	Gln	Met	Phe	Gly	Lys	Ala	Pro	Lys
		130				135					140				
Val	Phe	Arg	Asn	Ser	Ser	Leu	Ile	Tyr	Ser	Asp	Glu	Ile	Gly	Ala	Thr
145					150					155					160

Val Ala Ser Met Gly Phe Lys Gly Met Leu Thr Glu Gly Ala Lys His
 165 170 175
 Val Leu Gly Trp Lys Ser Pro His Tyr Val Tyr His Cys Asn Gln Ala
 180 185 190
 Pro Ser Leu Lys Leu Leu Leu Arg Asp Phe Lys Leu Ser Asp Asp Ile
 195 200 205
 Ser Leu Arg Phe Ser Asn Ser Asp Trp Ser Glu Tyr Pro Leu Phe Ala
 210 215 220
 Asp Lys Phe Ile Gly Trp Ile Asp Ala Leu Pro Gln Glu Glu Gln Val
 225 230 235 240
 Ile Asn Ile Phe Met Glu Leu Lys Ala Leu Gly Met Ala Gln Pro Leu
 245 250 255
 Ser Ser Asn Ile Leu Glu Phe Leu Lys Ala Leu Pro Tyr Cys Ala Lys
 260 265 270
 Glu Lys Gly Ile Thr Phe Ser Thr Pro Ser Glu Ile Ile Ser Lys Leu
 275 280 285
 Lys Ser Val Ser Gln Leu Asp Val Pro Tyr Pro Met Ser Trp Val Asp
 290 295 300
 Glu Glu Arg Asp Thr Ser Ser Trp Leu Gly Asn Val Leu Gln Arg Glu
 305 310 315 320
 Ala Phe Ser Lys Leu Tyr Ser Val Ala Glu Arg Val His Leu Cys Asp
 325 330 335
 Asp Arg Arg Ile Lys Gln Asp Trp Asp Tyr Leu Gln Ala Ser Asn Asn
 340 345 350
 Phe Arg Phe Met Thr Thr Lys Asn Thr Gly Val Trp Leu Asn Arg Gly
 355 360 365
 Ile Tyr Asp Ser Pro Tyr Asp Ala Phe Thr Asn Tyr Met Asn Ile Leu
 370 375 380
 Gly Asp Phe Ile Lys Arg Val Asn Ser Leu Tyr Pro Glu Asp Ile Asp
 385 390 395 400
 Asn Glu Glu Leu Asn Ser Leu Leu Thr Thr Ile Lys Asn Gln Gly Glu
 405 410 415
 Glu Ile Ala Glu Leu His Lys Glu Val Asp Lys Leu Gln Ala Lys Ala
 420 425 430
 Glu Lys Ala Ala Lys Thr Val Lys Ala Glu Pro Lys Ala Ala Pro Lys
 435 440 445
 Lys Ala Ala Ala Lys Lys Pro Ala Ala Lys Lys Ala Thr Ala Lys Lys
 450 455 460
 Glu Asp
 465

<210> 8507
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 8507
 Gly Leu Thr Asp Ala Cys Lys Asn Ala Phe Ala Val Pro Leu Thr Lys
 1 5 10 15
 Glu Ala Thr Arg Lys Arg Gly Lys Leu Ser Trp Leu Ala Asp Gly Met
 20 25 30
 Tyr Lys Pro Lys Ala Thr Ala Asn Met Ala Asn Glu Ser Ala Met Val
 35 40 45
 Cys Leu Tyr Pro Ile Ala Leu Ile Val Ile Glu Ala Gly
 50 55 60

<210> 8508
 <211> 121
 <212> PRT

<213> B.fragilis

<400> 8508

Val Ile Lys Asp His Pro Thr Glu Leu Thr Tyr Ile Tyr Leu Tyr Lys
 1 5 10 15
 Met Tyr Ala Ile Val Glu Ile Asn Gly Gln Gln Phe Lys Ala Glu Ala
 20 25 30
 Gly Gln Lys Leu Phe Val His His Ile Gln Asn Ala Glu Asn Gly Ala
 35 40 45
 Thr Val Glu Phe Asp Lys Val Leu Leu Val Asp Lys Asp Gly Asn Val
 50 55 60
 Thr Val Gly Ala Pro Thr Val Asp Gly Ala Lys Val Val Cys Gln Ile
 65 70 75 80
 Val Ser Ser Leu Val Lys Gly Asp Lys Val Leu Val Phe His Lys Lys
 85 90 95
 Arg Arg Lys Gly His Arg Lys Leu Asn Gly His Arg Gln Gln Phe Thr
 100 105 110
 Glu Leu Thr Ile Thr Glu Val Val Ala
 115 120

<210> 8509

<211> 158

<212> PRT

<213> B.fragilis

<400> 8509

Lys Gly Arg Glu Gly Lys Lys Lys Arg Lys Glu Lys Glu Arg Lys Glu
 1 5 10 15
 Lys Glu Glu Glu Arg Arg Arg Glu Lys Gly Lys Glu Arg Lys Lys Glu
 20 25 30
 Arg Glu Glu Arg Lys Lys Arg Glu Lys Glu Lys Glu Lys Arg Gly Arg
 35 40 45
 Lys Arg Lys Arg Arg Gly Gly Arg Gly Lys Gly Lys Gly Lys Lys
 50 55 60
 Lys Glu Glu Arg Lys Glu Glu Lys Arg Arg Arg Lys Arg Lys Gly Arg
 65 70 75 80
 Glu Lys Lys Arg Arg Gly Lys Lys Gly Lys Glu Arg Glu Lys Glu Lys
 85 90 95
 Lys Lys Gly Lys Gly Glu Arg Lys Lys Arg Lys Arg Gly Lys Lys Gly
 100 105 110
 Lys Lys Lys Lys Glu Glu Glu Lys Gly Arg Lys Gly Lys Lys Gly Lys
 115 120 125
 Lys Gly Glu Glu Gly Arg Arg Lys Lys Gly Arg Glu Gly Glu Gly Glu
 130 135 140
 Gly Lys Arg Gly Gly Lys Arg Lys Arg Lys Lys Glu Glu Gly
 145 150 155

<210> 8510

<211> 599

<212> PRT

<213> B.fragilis

<400> 8510

Leu Leu Met Glu Asn Leu Lys Asn Val Ala Pro Ile Glu Asp Phe Asn
 1 5 10 15
 Trp Asp Ala Tyr Glu Asn Gly Glu Ser Phe Ala Gly Ala Ser His Glu
 20 25 30
 Glu Leu Glu Lys Ala Tyr Asp Gly Thr Leu Asn Lys Val Asn Asp Arg
 35 40 45

Glu Val Val Asp Gly Thr Val Ile Ala Met Asn Lys Arg Glu Val Val
 50 55 60
 Val Asn Ile Gly Tyr Lys Ser Asp Gly Ile Ile Pro Leu Asn Glu Phe
 65 70 75 80
 Arg Tyr Asn Pro Asp Leu Lys Val Gly Asp Thr Val Glu Val Tyr Ile
 85 90 95
 Glu Asn Gln Glu Asp Lys Lys Gly Gln Leu Val Leu Ser His Arg Lys
 100 105 110
 Ala Arg Ala Thr Arg Ser Trp Asp Arg Val Asn Ala Ala Leu Glu Asn
 115 120 125
 Glu Glu Ile Ile Lys Gly Tyr Ile Lys Cys Arg Thr Lys Gly Gly Met
 130 135 140
 Ile Val Asp Val Phe Gly Ile Glu Ala Phe Leu Pro Gly Ser Gln Ile
 145 150 155 160
 Asp Val Lys Pro Ile Arg Asp Tyr Asp Val Phe Val Gly Lys Thr Met
 165 170 175
 Glu Phe Lys Val Val Lys Ile Asn Gln Glu Phe Lys Asn Val Val Val
 180 185 190
 Ser His Lys Ala Leu Ile Glu Ala Glu Leu Glu Gln Gln Lys Lys Glu
 195 200 205
 Ile Ile Gly Lys Leu Glu Lys Gly Gln Val Leu Glu Gly Thr Val Lys
 210 215 220
 Asn Ile Thr Ser Tyr Gly Val Phe Ile Asp Leu Gly Gly Val Asp Gly
 225 230 235 240
 Leu Ile His Ile Thr Asp Leu Ser Trp Gly Arg Val Ser Asp Pro Lys
 245 250 255
 Glu Val Val Glu Leu Asp Gln Lys Leu Asn Val Val Ile Leu Asp Phe
 260 265 270
 Asp Asp Glu Lys Lys Arg Ile Ala Leu Gly Leu Lys Gln Leu Thr Pro
 275 280 285
 His Pro Trp Asp Ala Leu Asp Pro Asn Leu Gln Val Gly Asp Lys Val
 290 295 300
 Lys Gly Lys Val Val Val Met Ala Asp Tyr Gly Ala Phe Ile Glu Ile
 305 310 315 320
 Ala Pro Gly Val Glu Gly Leu Ile His Val Ser Glu Met Ser Trp Ser
 325 330 335
 Gln His Leu Arg Ser Ala Gln Asp Phe Met Lys Val Gly Asp Glu Val
 340 345 350
 Glu Ala Val Val Leu Thr Leu Asp Arg Glu Glu Arg Lys Met Ser Leu
 355 360 365
 Gly Ile Lys Gln Leu Lys Gln Asp Pro Trp Glu Thr Ile Glu Glu Lys
 370 375 380
 Tyr Pro Val Gly Ser Lys His Thr Ala Lys Val Arg Asn Phe Thr Asn
 385 390 395 400
 Phe Gly Val Phe Val Glu Ile Glu Glu Gly Val Asp Gly Leu Ile His
 405 410 415
 Ile Ser Asp Leu Ser Trp Thr Lys Lys Val Lys His Pro Ser Glu Phe
 420 425 430
 Thr Gln Ile Gly Ala Asp Ile Glu Val Gln Val Leu Glu Ile Asp Lys
 435 440 445
 Glu Asn Arg Arg Leu Ser Leu Gly His Lys Gln Leu Glu Glu Asn Pro
 450 455 460
 Trp Asp Val Phe Glu Thr Val Phe Thr Val Gly Ser Val His Glu Gly
 465 470 475 480
 Thr Ile Ile Glu Met Leu Asp Lys Gly Ala Val Val Ala Leu Pro Tyr
 485 490 495
 Gly Val Glu Gly Phe Ala Thr Pro Lys His Leu Val Lys Glu Asp Gly
 500 505 510
 Ser Gln Ala Gln Met Asp Glu Lys Leu Glu Phe Lys Val Ile Glu Phe

515	Asn Lys Asp Ala Lys Arg	520	Ile Ile Leu Ser His Ser Arg Ile Phe Glu	525	
530		535		540	
545	Asp Val Ala Lys Ala Glu Glu Arg Ala Glu Lys Lys Ala Ala Ser Asn	550		555	560
	Ala Lys Lys Ser Ser Lys Arg Glu Glu Thr Pro Ala Ile Gln Asn Gln	565		570	575
	Ala Ala Ser Thr Thr Leu Gly Asp Ile Asp Ala Leu Ala Ala Leu Lys	580		585	590
	Glu Gln Leu Glu Gly Lys Lys				
595					

<210> 8511
 <211> 646
 <212> PRT
 <213> B.fragilis

<400> 8511

1	Ser Tyr Leu Cys Phe Arg Ser Lys Glu Thr Asn Ile Gln Met Lys Gln	10		15
	Thr Pro Phe Arg Cys Leu Cys Leu Leu Leu Ile Leu Leu Gly Ala Val	20		30
	His Ser Arg Leu Ser Ala His Ala Asp Lys Thr Arg Glu Asp Val Leu	35		45
	Phe Leu Asn Ser Ile Asn Phe Asn Leu Pro Trp Ala Lys Asp Val Phe	50		60
	Trp Tyr Thr His Gln Ala Leu Gln Lys Lys Asn Ile Ser Val Lys Ala	65		75
	Glu Ser Leu Ser Val Pro Ala Leu Cys Asn Arg Lys Glu Ala Ala Ala	80		90
	Val Val Glu Gln Leu Arg Arg Lys Tyr Asp Val Pro Pro Arg Leu Ile	85		95
	Val Phe Ile Gly Asp Pro Gly Trp Ile Val Cys Arg Glu Leu Phe Asp	100		110
	Asp Val Trp Lys Asp Val Pro Val Ile Ile Thr Asn Ala Arg Asp Arg	105		115
	Leu Pro Ala Thr Leu Asp Ile Leu Leu Ser His Glu Glu Leu Thr Glu	120		125
	Ser Asn Thr Val Pro Ala Tyr Glu Trp Arg Lys Gly Tyr Asn Val Thr	130		135
	Thr Leu Gly Gln Val Tyr Tyr Val Lys Glu Thr Ile Gly Leu Met Arg	140		145
	Gln Leu Met Pro Asp Met Lys Arg Leu Ala Phe Ile Ser Asp Asp Arg	150		155
	Tyr Ile Ser Glu Ala Val Arg Gly Asp Val Glu Gln Ala Met Thr Gly	160		165
	Ser Phe Pro Glu Leu Ala Phe Glu Gln Leu Ser Thr Arg Asn Ile Ser	170		175
	Thr Glu Met Leu Leu Asp Thr Leu Lys Ser Tyr Asp Lys Thr Thr Gly	180		185
	Leu Ile Tyr Tyr Ser Trp Phe Glu Thr His Asn Gln Asp Asp Asn Asn	190		195
	Tyr Leu Phe Asp His Ile Gln Glu Ile Ile Thr Arg Phe Val His Ser	200		205
	Pro Leu Phe Leu Leu Ala Pro Glu Asp Leu Ser Asn Asn Thr Phe Ala	210		215
	Gly Gly Tyr Tyr Val Ser Val Glu Ser Phe Gly Asp Ser Leu Leu Gln	220		225
	Leu Ile His Arg Val Leu Glu Gly Glu Phe Pro Arg Asp Ile Pro Pro	230		235
		240		245
		250		255
		260		265
		270		275
		280		285
		290		295
		300		305
		310		315
		320		325

2011b	2011c	2011d	2011e	2011f	2011g	2011h	2011i	2011j	2011k	2011l	2011m	2011n	2011o	2011p	2011q	2011r	2011s	2011t	2011u	2011v	2011w	2011x	2011y	2011z
2011b	2011c	2011d	2011e	2011f	2011g	2011h	2011i	2011j	2011k	2011l	2011m	2011n	2011o	2011p	2011q	2011r	2011s	2011t	2011u	2011v	2011w	2011x	2011y	2011z

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<400> 8512															
Ser	Ser	Thr	Cys	Met	Asp	Ser	Ile	His	Leu	Gln	Gln	Thr	Leu	Pro	Gln
1				5					10					15	
Val	Phe	Ala	Asp	Arg	Asn	Ser	Ile	Thr	Ser	Asp	Val	Trp	His	Arg	Asn
			20					25					30		
Leu	Val	Phe	His	Lys	Gly	Lys	Ser	Tyr	Leu	Ile	Glu	Ala	Ala	Ser	Gly
		35					40					45			
Thr	Gly	Lys	Ser	Ser	Leu	Cys	Ser	Tyr	Ile	Tyr	Gly	Tyr	Arg	Asn	Asp
	50					55					60				
Tyr	Gln	Gly	Ile	Ile	Asn	Phe	Asp	Glu	Thr	Asn	Ile	Lys	Ala	Tyr	Pro
65					70					75					80
Val	Lys	Gln	Trp	Val	Glu	Ile	Arg	Lys	His	Ser	Leu	Ser	Met	Leu	Phe

95

<213> B.fragilis

Lys Glu Lys Val Arg Ala Arg Ile Lys Gly Lys Ser Lys Tyr Asp Leu

275	280	285
Ser Asp Ser Tyr Asn Leu Gln Cys Glu Thr Thr	Ser Phe His Thr Asp	
290	295	300
Ser Ala Tyr Phe Glu Thr Leu Arg Pro Ile Pro	Leu Ser Glu Ala Glu	
305	310	315
Arg Arg Leu Tyr Lys Glu Asp Ala Leu Arg Lys	Asp Thr Ile Gln Arg	
325	330	335
Asn Ile Lys Pro Lys Ser Lys Ser Gln Val Phe	Trp Gly Gln Val Gly	
340	345	350
Asp Val Leu Ile Ser Asp Tyr Lys Leu Asn Leu	Ser Asn Leu Gly Ser	
355	360	365
Val Lys Cys Ser Pro Leu Ile Asn Pro Phe Leu	Leu Ser Tyr Ser Gly	
370	375	380
Ser Asn Gly Leu Ser Tyr Arg Gln Ser Phe Lys	Tyr Asn Arg Leu Phe	
385	390	395
Lys His Asp Arg Leu Leu Arg Val Val Pro Lys	Leu Gly Tyr Asn Phe	
405	410	415
Thr Arg Lys Glu Phe Tyr Trp Ser Val Asn Thr	Glu Phe Asn Tyr Leu	
420	425	430
Pro Glu Lys Met Gly Ala Val His Ile Asp Phe	Gly Asn Gly Asn Arg	
435	440	445
Ile Tyr Ser Ser Asp Val Leu Asp Asp Leu Lys	Ala Ile Pro Asp Ser	
450	455	460
Val Phe Asp Phe Asn Gln Ile His Leu Asp Tyr	Phe Tyr Asp Leu Tyr	
465	470	475
Phe Asn Phe Arg His Ser Ile Glu Ile Ile Asn	Gly Leu Glu Leu Ser	
485	490	495
Val Gly Leu Ser Thr His Arg Arg Lys Ala Val	Lys Ser Ser Lys Leu	
500	505	510
Val Pro Leu Thr Lys Ser Arg Glu Thr Leu Asn	Glu Asp Ile Gln Asn	
515	520	525
Lys Ile Arg Asn Thr Tyr Leu Ser Phe Ala Pro	Arg Val Arg Leu Glu	
530	535	540
Trp Thr Pro Cys Leu Tyr Tyr Tyr Met Asn Gly	His Arg Lys Ile Asn	
545	550	555
Leu Arg Ser Lys Tyr Pro Thr Phe Ser Ile Asp	Trp Glu Arg Gly Ile	
565	570	575
Lys Gly Val Phe Gly Ser Thr Gly Gln Tyr Glu	Arg Leu Glu Phe Asp	
580	585	590
Leu Gln His Ile Pro Leu Gly Leu Met Arg Asn	Ile Tyr Tyr Arg	
595	600	605
Phe Gly Phe Gly Met Phe Thr Asn Gln Lys Glu	Met Tyr Phe Val Asp	
610	615	620
Phe Asn Asn Phe Thr Arg Ser Asn Leu Pro Glu	Gly Trp Asn Asp Glu	
625	630	635
Ile Gly Gly Val Phe Gln Leu Leu Asp Arg Arg	Trp Tyr Asn Ala Ser	
645	650	655
Arg Lys Tyr Ile Arg Gly His Phe Thr Tyr Glu	Ala Pro Phe Leu Leu	
660	665	670
Leu Lys His Leu Ile Lys Tyr Thr Arg Tyr Val	Gln Asn Glu Arg Leu	
675	680	685
Tyr Ala Ser Ile Leu Ser Val Pro His Leu Gln	Pro Tyr Val Glu Leu	
690	695	700
Gly Tyr Gly Ile Gly Thr His Ile Phe Asp Phe	Gly Val Phe Val Gly	
705	710	715
Ser Glu Asn Trp Lys Tyr Thr Glu Val Gly Cys	Lys Phe Thr Phe Glu	
725	730	735
Leu Phe Asn Arg		
740		

<210> 8514
 <211> 320
 <212> PRT
 <213> B.fragilis

<400> 8514

Asn	Ile	Asn	Arg	Ser	Met	Glu	Thr	Glu	Arg	Ile	Lys	Cys	Leu	Ile	Ile
1				5					10					15	
Gly	Ser	Gly	Pro	Ala	Gly	Tyr	Thr	Ala	Ile	Tyr	Ala	Gly	Arg	Ala	
			20					25				30			
Asn	Leu	Ser	Pro	Val	Leu	Tyr	Glu	Gly	Ile	Gln	Pro	Gly	Gly	Gln	Leu
		35					40					45			
Thr	Thr	Thr	Thr	Asp	Val	Glu	Asn	Phe	Pro	Gly	Tyr	Pro	Gln	Gly	Ile
	50					55					60				
Ser	Gly	Pro	Gln	Leu	Met	Glu	Asp	Leu	Arg	Thr	Gln	Ala	Glu	Arg	Phe
65					70				75					80	
Gly	Ala	Asp	Ile	Arg	Phe	Gly	Ile	Ala	Thr	Ala	Ser	Asp	Leu	Gly	Gln
				85				90					95		
Ala	Pro	Tyr	Lys	Ile	Thr	Ile	Asp	Gly	Glu	Lys	Val	Ile	Glu	Ala	Asp
			100					105					110		
Ser	Leu	Ile	Ile	Ala	Thr	Gly	Ala	Thr	Ala	Lys	Tyr	Leu	Gly	Leu	Asp
		115					120						125		
Asp	Glu	Lys	Lys	Tyr	Ala	Gly	Met	Gly	Val	Ser	Ala	Cys	Ala	Thr	Cys
	130					135					140				
Asp	Gly	Phe	Phe	Tyr	Arg	Lys	Lys	Val	Val	Ala	Val	Val	Gly	Gly	Gly
145					150				155					160	
Asp	Thr	Ala	Cys	Glu	Glu	Ala	Ile	Tyr	Leu	Ala	Gly	Leu	Ala	Ser	Lys
				165				170						175	
Val	Tyr	Leu	Val	Val	Arg	Lys	Pro	Tyr	Leu	Arg	Ala	Ser	Lys	Ile	Met
			180					185					190		
Gln	Glu	Arg	Val	Arg	Lys	His	Asp	Lys	Ile	Glu	Val	Leu	Phe	Glu	His
		195					200					205			
Asn	Val	Val	Gly	Leu	Phe	Gly	Glu	Asn	Gly	Val	Glu	Gly	Met	Asn	Leu
	210					215					220				
Val	Lys	Arg	Trp	Glu	Glu	Pro	Asp	Glu	Glu	Arg	Tyr	Ser	Leu	Pro	Ile
225				230						235				240	
Asp	Gly	Phe	Phe	Leu	Ala	Ile	Gly	His	Lys	Pro	Asn	Ser	Asp	Ile	Phe
				245					250					255	
Lys	Pro	Tyr	Leu	Asp	Thr	Asp	Glu	Val	Gly	Tyr	Ile	Thr	Thr	Asp	Gly
			260				265						270		
Asp	Ser	Pro	Arg	Thr	Lys	Val	Pro	Gly	Val	Phe	Ala	Ala	Gly	Asp	Val
		275					280					285			
Ala	Asp	Pro	His	Tyr	Arg	Gln	Ala	Ile	Thr	Ala	Ala	Gly	Ser	Gly	Cys
	290					295					300				
Lys	Ala	Ala	Ile	Glu	Ala	Glu	Arg	Tyr	Leu	Ser	Glu	Lys	Gly	Leu	Ile
305					310					315					320

<210> 8515
 <211> 237
 <212> PRT
 <213> B.fragilis

<400> 8515

Cys	Lys	Ser	Ser	Lys	Lys	Lys	Asn	Phe	Ile	Gly	Leu	Pro	Thr	Thr	Phe
1				5					10					15	
Ser	Tyr	Leu	Cys	Val	Ser	Ile	Gln	Ala	Asp	Met	Lys	Lys	Glu	Ser	Gln
		20					25					30			
Val	Ile	Phe	Asp	Lys	Asn	Val	Ile	Glu	Phe	Val	Thr	Val	Ala	Ala	Glu

[illegible]

<400> 8516

Gly 1	Glu	Arg	Arg	Glu 5	Lys	Glu	Glu	Lys	Gly 10	Glu	Arg	Lys	Lys	Arg	Lys
Gly	Gly	Gly	Lys 20	Lys	Lys	Arg	Lys	Arg	Glu 25	Arg	Lys	Lys	Lys	Arg	Glu
Arg	Gly	Lys 35	Lys	Lys	Glu	Arg	Glu	Arg	Lys 40	Arg	Glu	Lys	Gly	Glu	Lys
Lys	Lys 50	Lys	Lys	Arg	Gly	Lys 55	Arg	Lys	Gly	Glu	Arg	Gly	Lys	Glu	Glu
Gly 65	Gly	Lys	Glu	Arg	Gly 70	Lys	Glu	Lys	Lys	Glu 75	Lys	Glu	Gly	Lys	Gly
Lys	Glu	Lys	Lys	Arg 85	Glu	Lys	Arg	Glu	Gly 90	Lys	Arg	Lys	Gly	Glu	Lys
Lys	Arg	Lys	Gly 100	Arg	Glu	Glu	Lys	Lys 105	Lys	Lys	Gly	Glu	Lys	Arg	Lys
Lys	Lys	Glu	Arg 115	Arg	Arg	Glu	Arg	Lys 120	Lys	Arg	Glu	Glu	Arg	Lys	Lys
Arg	Arg	Arg	Gly 130	Lys	Lys	Glu	Lys	Arg 135	Glu	Arg	Arg	Gly	Gly	Arg	Gly
Lys 145	Glu	Arg	Arg	Glu	Glu	Lys 150	Lys	Glu	Glu	Gly 155	Gly	Gly	Ile	Arg	Arg
Lys	Arg	Arg	Gly 165	Lys	Glu	Gly	Arg	Lys	Gly 170	Lys	Glu	Arg	Glu	Glu	Gly
Glu	Lys	Glu	Gly 180	Lys	Arg	Lys	Glu	Arg 185	Lys	Glu	Lys	Glu	Glu	Lys	Arg
Lys	Gly	Glu	Lys 195	Lys	Arg	Arg	Arg	Lys 200	Gly	Lys	Gly	Glu	Glu	Lys	Lys
Glu	Glu	Glu	Lys	Gly	Gly	Glu	Gly	Glu	Lys	Glu	Lys	Glu	Gly	Arg	Glu

210		215		220
Gly Arg Glu Lys Glu Lys Gly Gly Glu Glu Lys Gly Glu Gly Glu Gly				
225		230		240
Glu Gly Arg Arg Glu Gly Gly Lys Arg Arg Lys Arg Arg Glu Arg Lys				
	245		250	255
Lys Lys Lys Lys Lys Lys Asn Asn Lys Lys Lys Lys Glu Lys Lys His				
	260		265	270
Pro His Val Ser Thr Pro Lys Val Tyr Ala Ser Arg Thr Glu Ser Thr				
	275		280	285
Glu Lys Thr Ile Thr Asn Leu Lys Asp Lys Ser Ile Cys Leu				
290		295		300

<210> 8517
 <211> 176
 <212> PRT
 <213> B.fragilis

<400> 8517
Arg Asp Val Gly Asp Ile Arg His Phe Ser Arg Ser Phe Glu Ser Phe
1 5 10 15
Leu Pro Ser Cys Arg Glu Lys Asn Arg Glu Val Phe Gly Arg Gly Gln
20 25 30
Leu Asn Leu Leu Ile Cys Thr Met Ser Lys Lys Lys Arg Gly Glu Glu
35 40 45
Arg Met Lys Glu Glu Asp Asn Ile Leu Lys Lys Val Gly Lys Lys Asn
50 55 60
Ser Phe Lys Val Pro Glu Gly Tyr Phe Glu Asn Leu Thr Ser Glu Val
65 70 75 80
Met Gly Lys Leu Pro Glu Lys Glu Gly Pro Ala Phe Glu Glu Val Lys
85 90 95
Gln Pro Thr Met Trp Ile Arg Met Lys Pro Leu Leu Tyr Met Ala Ala
100 105 110
Met Phe Ile Gly Ala Ala Leu Ile Ile Arg Val Ala Ser Ser Asn His
115 120 125
Gln Pro Thr Thr Ala Gly Asp His Leu Thr Ala Asn Glu Ala Ala Thr
130 135 140
Glu Val Val Ser Asp Glu Tyr Ile Asp Val Ala Leu Asp Arg Ser Met
145 150 155 160
Leu Asp Asp Tyr Ser Leu Tyr Val Tyr Leu Ser Asp Ala Thr Ala Glu
165 170 175

<210> 8518
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 8518
Gly Ser Asn Gly Leu Tyr Ile Pro Thr Leu Lys Lys Gln Ile Ile Asn
1 5 10 15
His Thr Phe Ala Gly Leu Phe Leu Thr Phe Ser His Leu Tyr Asn Arg
20 25 30
Ser Lys Ser Phe Gly Ile Asp Arg Phe Leu Phe Tyr Arg Pro Phe Ile
35 40 45
Leu Cys Phe Phe Arg Phe Ser Phe Pro Ile Phe Leu Phe Ser Phe Pro
50 55 60
Phe Ile Pro Cys Phe Phe His Ser Val Asn
65 70

<210> 8519

Variable	Mean	SD	Min	Max
Age	38.5	12.5	25	65
Gender	0.5	0.5	0	1
Marital status	0.5	0.5	0	1
Education	12.5	2.5	9	16
Income	3500	1500	1000	8000
Health	0.5	0.5	0	1
Smoking	0.3	0.5	0	1
Drinking	0.2	0.4	0	1
Exercise	0.4	0.5	0	1
Stress	0.6	0.5	0	1
Depression	0.3	0.5	0	1
Loneliness	0.4	0.5	0	1
Social support	0.5	0.5	0	1
Life satisfaction	0.5	0.5	0	1
Quality of life	0.5	0.5	0	1
Health-related quality of life	0.5	0.5	0	1
Physical health	0.5	0.5	0	1
Mental health	0.5	0.5	0	1
Overall health	0.5	0.5	0	1

[illegible]

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<210> 8520
<211> 431
<212> PRT
<213> B.fragilis
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Phe 1	Ile	Gly	Gly	Gly 5	Thr	Lys	Met	Lys	Val 10	Leu	Met	Phe	Gly	Trp 15	Glu
Phe	Pro	Pro	His 20	Ile	Leu	Gly	Gly	Leu	Gly	Thr	Ala	Ser	Tyr	Gly	Leu
Thr	Lys	Gly	Met 35	Ser	Gln	Gln	Glu	Asp	Met	Glu	Ile	Thr	Phe	Cys	Ile
Pro	Lys	Pro	Trp	Gly	Asp	Glu	Asp	Gln	Ser	Phe	Leu	Arg	Ile	Ile	Gly
Met 65	Asn	Ser	Thr	Pro	Ile 70	Val	Trp	Arg	Asp	Val	Asp	Trp	Glu	Tyr	Val
Lys	Gly	Arg	Val	Gly	Ser	Tyr	Met	Asp	Pro	Gln	Leu	Tyr	Phe	Asp	Leu
Arg	Asp	His	Ile 100	Tyr	Ala	Asp	Phe	Asn	Tyr	Leu	Asn	Ala	Asn	Asp	Leu
Gly	Cys	Ile	Glu	Phe	Ser	Gly	Arg	Tyr	Pro	Asp	Asn	Leu	His	Glu	Glu
Ile	Asn	Asn	Tyr	Ser	Ile	Val	Ala	Gly	Val	Ile	Ala	Arg	Gln	Gln	Glu
Phe 145	Glu	Ile	Ile	His	Ser	His	Asp	Trp	Leu	Thr	Tyr	Pro	Ala	Gly	Ile
His	Ala	Lys	Gln	Val	Ser	Gly	Lys	Pro	Leu	Val	Ile	His	Val	His	Ala
Thr	Asp	Phe	Asp 180	Arg	Ser	Arg	Gly	Asn	Val	Asn	Pro	Thr	Val	Tyr	Ala
Ile	Glu	Lys	Asn	Gly	Met	Asp	His	Ala	Asp	His	Ile	Met	Cys	Val	Ser
Glu	Leu	Thr	Arg	Gln	Thr	Val	Ile	His	Lys	Tyr	Phe	Gln	Asp	Pro	Lys
Lys	Val	Ser	Thr	Val	His	Asn	Ala	Val	Ser	Pro	Leu	Ser	Gln	Glu	Ile

225		230		235		240
Gln Asp Ile Val	Pro Asn Lys Asn Pro	Lys Glu Lys Val	Val Thr Phe			
	245	250	255			
Leu Gly Arg Ile	Thr Met Gln Lys Gly	Pro Glu Tyr Phe	Val Glu Ala			
	260	265	270			
Ala Ala Met Val	Leu Gln Arg Thr Arg	Asn Val Arg Phe	Val Met Ala			
	275	280	285			
Gly Ser Gly Asp	Met Met Asp Gln Met	Ile Arg Leu Ala	Ala Glu Arg			
	290	295	300			
Gly Ile Ala Asp	Arg Phe His Phe Pro	Gly Phe Met Lys	Gly Lys Gln			
305	310	315	320			
Val Tyr Glu Val	Leu Lys Ala Ser Asp	Val Tyr Ile Met	Pro Ser Val			
	325	330	335			
Ser Glu Pro Phe	Gly Ile Ser Pro Leu	Glu Ala Met Gln	Cys Ser Val			
	340	345	350			
Pro Ser Ile Ile	Ser Lys Gln Ser Gly	Cys Ala Glu Ile	Leu Glu Lys			
	355	360	365			
Cys Ile Lys Thr	Asp Tyr Trp Asp Ile	His Ala Met Ala	Asp Ala Ile			
	370	375	380			
Tyr Ser Ile Cys	Thr Tyr Pro Ala Met	Tyr Glu Tyr Leu	Arg Asp Glu			
385	390	395	400			
Gly Lys Lys Glu	Val Asp Glu Ile Lys	Trp Glu Asn Val	Gly Tyr Lys			
	405	410	415			
Val Arg Gly Ile	Tyr Asp Glu Val Ile	Lys Asn Tyr Gly	Lys Gln			
	420	425	430			

<210> 8521
 <211> 819
 <212> PRT
 <213> B.fragilis

<400> 8521

His Thr Phe Ile	Thr Met Lys Lys Gly	Ile Thr Leu Phe	Leu Leu Ser
1	5	10	15
Leu Leu Phe Ile	Thr Pro Gly Cys Lys	Gln Ser Lys Glu	Thr Ile Val
	20	25	30
Asn Glu Tyr Asn	Ile Val Pro Leu Pro	Asn Gln Met Ile	Pro Gln Gln
	35	40	45
Gly Arg Phe Glu	Ile Ser Lys Lys Val	Arg Val Ile Thr	Thr Ala Cys
	50	55	60
Thr Pro Asp Val	Gln Ile Ile Ala Asp	Ser Leu Ile Asn	Arg Leu Lys
65	70	75	80
Leu Thr Ser Gly	Ile Thr Ile Lys Gln	Thr Phe Glu Asn	Val Thr Asp
	85	90	95
Glu Pro Val Ile	Arg Phe Val Pro Gln	Asp Gly Met Pro	Glu Glu Gly
	100	105	110
Tyr Lys Leu Ser	Val Thr Pro Gln Asn	Ile Thr Leu Thr	Ala Ser Thr
	115	120	125
Pro Lys Gly Phe	Phe Tyr Ala Val Gln	Thr Leu Tyr Gln	Leu Leu Pro
	130	135	140
Pro Val Val Tyr	Gly Asn Gln Lys Val	Lys Asn Ala Glu	Trp Ser Val
145	150	155	160
Pro Ala Val Glu	Ile Glu Asp Ala Pro	Arg Phe Ala Tyr	Arg Gly Leu
	165	170	175
Met Leu Asp Val	Cys Arg His Phe Ser	Pro Val Glu Tyr	Ile Tyr Lys
	180	185	190
Phe Ile Asp Met	Leu Ala Met His Lys	Met Asn Thr Phe	His Trp His
	195	200	205
Leu Thr Asp Asp	Gln Gly Trp Arg Ile	Glu Ile Lys Lys	Tyr Pro Lys

210	215	220
Leu Thr Glu Ile Gly Ser Lys Arg Lys Glu Thr Leu Val Asp Tyr Tyr		
225	230	235
Tyr Val Asn Tyr Pro Gln Val Phe Asp Gly Lys Glu His Gly Gly Tyr		240
	245	250
Tyr Thr Gln Glu Gln Ile Arg Ala Ile Val Asp Tyr Ala Ala Ser Lys		255
	260	265
Phe Ile Thr Val Ile Pro Glu Ile Glu Met Pro Gly His Ala Ile Ala		270
	275	280
Ala Ile Ala Ser Tyr Pro Glu Leu Ser Cys Thr Pro Asp Ser Thr Cys		285
	290	295
Asp Val Thr Gly Thr Trp Gly Val Phe Glu Gln Val Phe Cys Pro Ser		300
305	310	315
Asp Thr Thr Phe Gln Phe Leu Glu Gly Val Met Asp Glu Val Met Asp		320
	325	330
Leu Phe Pro Ser Lys Tyr Ile His Ile Gly Gly Asp Glu Cys Pro Lys		335
	340	345
Thr Ala Trp Ile Asn Ser Glu Tyr Cys Gln Ser Leu Ile Lys Gln Leu		350
	355	360
Gly Leu Lys Asp Asp Val Thr Pro Asn Val Ile Asp Gly Lys Lys His		365
370	375	380
Thr Lys Glu Glu Lys Leu Gln Ser Tyr Phe Ile Thr Arg Met Glu Lys		385
	390	395
Tyr Leu Asn Ser Lys Gly Arg Asn Ile Ile Gly Trp Asp Glu Ile Leu		400
	405	410
Glu Gly Gly Leu Ala Pro Asn Ala Thr Val Met Ser Trp Arg Gly Val		415
	420	425
Glu Gly Gly Leu Asn Ala Ala Lys Ala Gly His Asn Ala Ile Met Thr		430
	435	440
Pro Asn Pro Tyr Ala Tyr Leu Asp Gln Tyr Gln Glu Glu Pro Glu Ile		445
	450	455
Ala Pro Val Thr Ile Gly Gly Tyr Asn Thr Leu Lys Lys Thr Tyr Ser		460
465	470	475
Tyr Asn Pro Val Pro Asp Asp Ala Asn Glu Leu Val Lys Lys His Ile		480
	485	490
Ile Gly Val Gln Gly Asn Ile Trp Thr Glu Tyr Met Pro Gly Asn Asp		495
	500	505
Asn Arg Asp Tyr Gln Ala Phe Pro Arg Ala Val Ala Ile Ala Glu Thr		510
	515	520
Gly Trp Thr Leu Asn Ala Asn Lys Asn Trp Asn Asn Phe Cys Gln Arg		525
	530	535
Met Val Glu Asp Phe Arg Arg Met Asp Val Lys Asn Val Lys Ala Cys		540
545	550	555
Arg Asn Phe Phe Asp Val Asn Ile Asn Thr His Val Asp Glu Thr Asn		560
	565	570
Thr Leu Lys Val Val Leu Glu Ser Phe Tyr Pro Asn Ala Glu Ile His		575
	580	585
Tyr Thr Thr Asn Gly Ser Val Pro Thr Val Glu Ser Ala Ile Tyr Asn		590
	595	600
Gln Pro Phe Ala Leu Ser Gly Glu Met Asp Val Lys Ala Ala Ala Phe		605
	610	615
Lys Asp Gly Lys Met Leu Gly Lys Val Ser Gly Lys Lys Leu Tyr Gly		620
625	630	635
Asn Leu Ile Ser Gly Lys Ser Phe Thr Val Thr Pro Pro Ile Gly Ala		640
	645	650
Ala Lys Gly Asp Ile Leu Gly Glu Asn Asp Val Leu Gly Thr Asp Ile		655
	660	665
Ser Thr Phe Gly Leu Thr Asn Gly Lys Arg Gly Asn Ile Ala Ser Met		670
	675	680
		685

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Thr Pro Trp Ser Gly Phe Arg Met Asn Asp Ala Cys Asn Lys Leu Val
 690 695 700
 Phe Ile Val Glu Phe Glu Gln Pro Thr Thr Val Ser Lys Val Val Phe
 705 710 715 720
 Gly Ser Leu Tyr Asn Pro Ala Ser Val Ile Leu Pro Pro Ser Val Ala
 725 730 735
 Thr Val Glu Thr Ser Ser Asp Gly Arg Lys Tyr Asp Lys Met Ala Glu
 740 745 750
 Ala Ser Phe Lys Arg Asn Tyr Pro Glu Arg Gly Arg Lys Ala Phe Thr
 755 760 765
 Asp Thr Leu Gly Phe Ala Pro Lys Glu Val Lys Tyr Ile Lys Ile Thr
 770 775 780
 Leu Gln Asn Gly Gly Thr Leu Arg Asn Gly Ile Asp Phe Val Lys Asp
 785 790 795 800
 Pro Asn Glu Lys Asp Val Val Gln Ala Asn Ile Tyr Leu Asp Glu Ile
 805 810 815
 Glu Val Tyr

<210> 8522

<211> 85

<212> PRT

<213> B.fragilis

<400> 8522

Tyr Thr Pro Ile Phe Ile Gly Val Phe Cys Lys Ile Asn Met Phe Phe
 1 5 10 15
 Leu Cys Thr Pro Leu Phe Val Cys Gly Arg Lys Asn Phe Phe Val Tyr
 20 25 30
 Phe Thr Tyr Pro Glu Ile Thr Ile Lys Tyr Glu Phe Ile Ser Arg Ile
 35 40 45
 Ile Gly Phe Phe Leu Tyr Leu Pro Ser Ile Arg Arg Leu Val Phe Glu
 50 55 60
 Val Gln Tyr Ile Asn Met Val Phe Leu Val Ile Leu Ala Leu Phe Cys
 65 70 75 80
 Ser Lys Gly Ser Gly
 85

<210> 8523

<211> 649

<212> PRT

<213> B.fragilis

<400> 8523

Cys Thr Thr Met Ser Tyr Leu His Phe Asp Lys Thr Leu Met Ile Asn
 1 5 10 15
 Leu Glu Glu Ser Leu Pro Arg Glu Ile Leu Arg Thr Asn Lys Ser Gly
 20 25 30
 Ala Tyr His Cys Thr Thr Ile Val Asp Cys Asn Thr Arg Lys Tyr His
 35 40 45
 Gly Leu Leu Val Ile Pro Val Pro Asn Leu Asp Asp Glu Asn His Val
 50 55 60
 Leu Leu Ser Ser Leu Asp Glu Thr Val Ile Gln His Gly Ala Glu Phe
 65 70 75 80
 Asn Leu Gly Leu His Lys Tyr Gln Gly Asn His Phe Ser Pro Asn Gly
 85 90 95
 His Lys Tyr Ile Arg Glu Phe Asp Cys Glu His Ile Pro Ala Thr Thr
 100 105 110
 Tyr Arg Val Gly Gly Val Ile Leu Arg Lys Glu Lys Ile Phe Val His

115	120	125
His Glu Asn Arg Ile Leu Ile Arg Tyr Thr Leu Val Asp Ala His Ser		
130	135	140
Ala Thr Thr Leu Arg Phe Arg Pro Phe Leu Ala Phe Arg Ser Val Arg		
145	150	155
Glu Tyr Thr His Glu Asn Ser Gln Ala Ser Arg Asp Tyr Gln Leu Val		
165	170	175
Glu Asn Gly Ile Lys Thr Cys Met Tyr Pro Gly Tyr Pro Glu Leu Phe		
180	185	190
Met Gln Leu Asn Lys Lys Asn Glu Phe His Tyr Glu Pro Asn Trp Tyr		
195	200	205
Arg Gly Ile Glu Tyr Pro Lys Glu Gln Glu Arg Gly Tyr Asp Phe Asn		
210	215	220
Glu Asp Leu Tyr Val Pro Gly Tyr Phe Glu Val Asp Ile Lys Lys Gly		
225	230	235
Glu Ser Ile Ile Phe Ser Ala Gly Ile Ser Glu Ile Ser Pro Arg Arg		
245	250	255
Leu Lys Gln Thr Phe Glu Ala Glu Val Ala Asp Arg Thr Pro Arg Asp		
260	265	270
Ser Phe Tyr His Cys Leu Lys Asn Ser Ala His Gln Phe His Asn Lys		
275	280	285
Gln Glu Glu Asp His Tyr Ile Leu Ala Gly Tyr Pro Trp Phe Lys Cys		
290	295	300
Arg Ala Arg Asp Met Phe Val Ser Leu Pro Gly Leu Thr Leu Ala Val		
305	310	315
Asp Glu Ile Gly Glu Phe Glu Asp Val Met Glu Thr Ala Arg Lys Ala		
325	330	335
Ile Asn Asn Tyr Ile Lys Gly Glu Pro Ile Gly Cys Lys Ile Tyr Glu		
340	345	350
Met Asp Asp Pro Asp Val Leu Leu Trp Ala Val Trp Ala Leu Gln Gln		
355	360	365
Tyr Ala Lys Glu Thr Ser Arg Glu Gln Cys Arg Ala Lys Tyr Gly Ser		
370	375	380
Leu Leu Glu Glu Ile Ile Asp Phe Ile Arg Gln Arg Lys His Asp Asn		
385	390	395
Leu Phe Leu His Glu Asn Gly Leu Leu Tyr Ala Asn Gly Ala Asp Arg		
405	410	415
Ala Ile Thr Trp Met Asn Ser Thr Val Asn Gly Arg Pro Val Ile Pro		
420	425	430
Arg Thr Gly Tyr Ile Val Glu Ile Asn Ala Leu Trp Tyr Asn Ala Leu		
435	440	445
Arg Phe Ile Ala Asp Leu Val Arg Glu Gly Gly Asn Gly Leu Leu Ala		
450	455	460
Asp Ser Leu Asp Ala Gln Ala Glu Val Thr Gly Lys Ser Phe Val Glu		
465	470	475
Val Phe Arg Asn Glu Tyr Gly Tyr Leu Leu Asp Tyr Val Asp Gly Asn		
485	490	495
Met Met Asp Trp Ser Val Arg Pro Asn Met Ile Phe Thr Val Ala Phe		
500	505	510
Asp Tyr Ser Pro Leu Asp Arg Val Gln Lys Lys Gln Val Leu Asp Ile		
515	520	525
Val Thr Lys Glu Leu Leu Thr Pro Lys Gly Leu Arg Thr Leu Ser Pro		
530	535	540
Lys Ser Gly Gly Tyr Asn Pro Asn Tyr Val Gly Pro Gln Ile Gln Arg		
545	550	555
Asp Tyr Ala Tyr His Gln Gly Thr Ala Trp Pro Trp Leu Met Gly Phe		
565	570	575
Tyr Met Glu Ala Tyr Leu Arg Ile Tyr Lys Met Ser Gly Ile Ser Phe		
580	585	590

115 120 125
 130 135 140
 145 150 155
 165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555
 565 570 575
 580 585 590

Val Glu Arg Gln Leu Ile Gly Leu Glu Asp Glu Met Thr Ser His Cys
 595 600 605
 Val Gly Ser Leu Pro Glu Leu Phe Asp Gly Asn Pro Pro Phe Lys Gly
 610 615 620
 Arg Gly Ala Val Ser Phe Ala Met Asn Val Ala Glu Ile Leu Arg Ile
 625 630 635 640
 Leu Lys Leu Leu Ser Lys Tyr Asn Leu
 645

<210> 8524
 <211> 745
 <212> PRT
 <213> B.fragilis

<400> 8524

Lys Lys His Ile Ile Leu Cys Pro Thr Thr Asn Lys Arg Asp Thr Ile
 1 5 10 15
 Met Ser Lys Met Arg Phe Phe Ala Leu Gln Glu Leu Ser Asn Arg Lys
 20 25 30
 Pro Leu Glu Ile Thr Thr Pro Ser Asn Lys Leu Ser Asp Tyr Tyr Ala
 35 40 45
 Ser His Val Phe Asp Arg Lys Lys Met Gln Glu Tyr Leu Pro Lys Glu
 50 55 60
 Ala Tyr Lys Ala Val Val Asp Ala Thr Glu Lys Gly Thr Pro Ile Ser
 65 70 75 80
 Arg Glu Met Ala Asp Leu Ile Ala Asn Gly Met Lys Ser Trp Ala Lys
 85 90 95
 Ser Leu Asn Val Thr His Tyr Thr His Trp Phe Gln Pro Leu Thr Asp
 100 105 110
 Gly Thr Ala Glu Lys His Asp Gly Phe Ile Glu Phe Gly Glu Asp Gly
 115 120 125
 Glu Val Ile Glu Arg Phe Ser Gly Lys Leu Leu Ile Gln Gln Glu Pro
 130 135 140
 Asp Ala Ser Ser Phe Pro Asn Gly Gly Ile Arg Asn Thr Phe Glu Ala
 145 150 155 160
 Arg Gly Tyr Thr Ala Trp Asp Val Ser Ser Pro Ala Phe Val Val Asp
 165 170 175
 Thr Thr Leu Cys Ile Pro Thr Ile Phe Ile Ser Tyr Thr Gly Glu Ala
 180 185 190
 Leu Asp Tyr Lys Thr Pro Leu Leu Lys Ala Leu Ala Val Asp Lys
 195 200 205
 Ala Ala Thr Glu Val Cys Gln Leu Phe Asp Lys Asn Ile Thr Arg Val
 210 215 220
 Phe Thr Asn Leu Gly Trp Glu Gln Glu Tyr Phe Leu Val Asp Thr Ser
 225 230 235 240
 Leu Tyr Asn Ala Arg Pro Asp Leu Arg Leu Thr Gly Arg Thr Leu Met
 245 250 255
 Gly His Ser Ser Ala Lys Asp Gln Gln Leu Glu Asp His Tyr Phe Gly
 260 265 270
 Ser Ile Pro Pro Arg Val Thr Ala Phe Met Lys Glu Leu Glu Ile Glu
 275 280 285
 Cys His Lys Leu Gly Ile Pro Val Lys Thr Arg His Asn Glu Val Ala
 290 295 300
 Pro Asn Gln Phe Glu Leu Ala Pro Ile Phe Glu Asn Cys Asn Leu Ala
 305 310 315 320
 Asn Asp His Asn Gln Leu Val Met Asp Leu Met Lys Arg Ile Ala Arg
 325 330 335
 Lys His His Phe Ala Val Leu Phe His Glu Lys Pro Tyr Asn Gly Val
 340 345 350

Asn Gly Ser Gly Lys His Asn Asn Trp Ser Leu Cys Thr Asp Thr Gly
 355 360 365
 Ile Asn Leu Phe Ala Pro Gly Lys Asn Pro Lys Gly Asn Met Leu Phe
 370 375 380
 Leu Thr Phe Leu Val Asn Val Leu Met Met Val His Lys Asn Gln Asp
 385 390 395 400
 Leu Leu Arg Ala Ser Ile Met Ser Ala Gly Asn Ser His Arg Leu Gly
 405 410 415
 Ala Asn Glu Ala Pro Pro Ala Ile Leu Ser Ile Phe Leu Gly Ser Gln
 420 425 430
 Leu Ser Ala Thr Leu Asp Glu Ile Val Arg Gln Val Thr Asn Ser Lys
 435 440 445
 Met Thr Pro Glu Glu Lys Thr Thr Leu Lys Leu Gly Ile Gly Arg Ile
 450 455 460
 Pro Glu Ile Leu Leu Asp Thr Thr Asp Arg Asn Arg Thr Ser Pro Phe
 465 470 475 480
 Ala Phe Thr Gly Asn Arg Phe Glu Phe Arg Ala Ala Gly Ser Ser Ala
 485 490 495
 Asn Cys Ala Ala Ala Met Ile Ala Ile Asn Ala Ala Met Ala Asn Gln
 500 505 510
 Leu Asn Glu Phe Lys Ala Ser Val Asp Lys Leu Met Glu Glu Gly Ile
 515 520 525
 Gly Lys Asp Glu Ala Ile Phe Arg Ile Leu Lys Glu Asn Ile Ile Ala
 530 535 540
 Ser Glu Pro Ile Arg Phe Glu Gly Asp Gly Tyr Ser Glu Glu Trp Lys
 545 550 555 560
 Gln Glu Ala Ala Arg Arg Gly Leu Thr Asn Ile Cys His Val Pro Glu
 565 570 575
 Ala Leu Met His Tyr Met Asp Asn Gln Ser Arg Ala Val Leu Ile Gly
 580 585 590
 Glu Arg Ile Phe Asn Glu Thr Glu Leu Ala Cys Arg Leu Glu Val Glu
 595 600 605
 Leu Glu Lys Tyr Thr Met Lys Val Gln Ile Glu Ser Arg Val Leu Gly
 610 615 620
 Asp Leu Ala Ile Asn His Ile Val Pro Ile Ala Val Ser Tyr Gln Asn
 625 630 635 640
 Arg Leu Leu Glu Asn Leu Cys Arg Met Lys Glu Ile Phe Ser Glu Glu
 645 650 655
 Glu Tyr Glu Val Met Ser Ala Asp Arg Lys Glu Leu Ile Lys Glu Ile
 660 665 670
 Ser His Arg Val Ser Ala Ile Lys Val Leu Val Arg Asp Met Thr Glu
 675 680 685
 Ala Arg Lys Val Ala Asn His Lys Glu Asn Phe Lys Glu Lys Ala Phe
 690 695 700
 Ala Tyr Glu Glu Thr Val Arg Pro Tyr Leu Glu Ser Ile Arg Asp His
 705 710 715 720
 Ile Asp His Leu Glu Met Glu Ile Asp Asp Glu Ile Trp Pro Leu Pro
 725 730 735
 Lys Tyr Arg Glu Leu Leu Phe Thr Lys
 740 745

<210> 8525

<211> 238

<212> PRT

<213> B.fragilis

<400> 8525

Lys Lys Asn Met Ile Thr Ile His Asn Leu Arg Lys Asn Phe Gly Thr
 1 5 10 15

Gln Thr Ala Val Asp Ile Glu Asn Tyr Thr Ile Asn Gln Gly Glu Met
 20 25 30
 Val Gly Leu Val Gly Asn Asn Gly Ala Gly Lys Thr Thr Leu Phe Arg
 35 40 45
 Leu Met Leu Asp Leu Leu Lys Ala Asp Thr Gly Glu Ile Ile Ile Asn
 50 55 60
 Asp Ile His Val Asn Gln Ser Glu Asp Trp Lys Ser Phe Thr Gly Ala
 65 70 75 80
 Phe Ile Asp Asp Gly Phe Leu Ile Ser Tyr Leu Thr Pro Glu Glu Tyr
 85 90 95
 Phe Tyr Phe Ile Gly Lys Met Tyr Gly Leu Lys Lys Glu Glu Val Asp
 100 105 110
 Glu Arg Leu Ile Pro Phe Glu Arg Phe Met Asn Gly Glu Val Leu Gly
 115 120 125
 Gln Lys Lys Phe Ile Arg Asn Phe Ser Ala Gly Asn Lys Gln Lys Ile
 130 135 140
 Gly Ile Val Ser Ala Met Leu His Tyr Pro Lys Leu Ile Ile Leu Asp
 145 150 155 160
 Glu Pro Phe Asn Phe Leu Asp Pro Ser Ser Gln Ser Val Ile Lys His
 165 170 175
 Leu Leu Lys Lys Tyr Asn Glu Glu His Asn Ala Thr Val Ile Ile Ser
 180 185 190
 Ser His Asn Leu Asn His Thr Val Asp Val Cys Pro Arg Ile Ala Val
 195 200 205
 Leu Glu His Gly Val Ile Ile Arg Asp Leu Val Asn Glu Asn Asn Ser
 210 215 220
 Ala Glu Lys Glu Leu Glu Asp Tyr Phe Asn Val Glu Glu Glu
 225 230 235

<210> 8526

<211> 427

<212> PRT

<213> B.fragilis

<400> 8526

Ser Ile Asp Met Leu Thr Ile Lys Gln Ile Thr Glu Asn Thr Asp Ala
 1 5 10 15
 Val Ile Arg Gly Leu Glu Lys Lys His Phe Lys Gly Ala Lys Glu Thr
 20 25 30
 Ile Ala Gln Val Ile Glu Val Asn Asp Lys Arg Arg Asn Thr Gln Asn
 35 40 45
 Gln Leu Asp Lys Asn Leu Ala Glu Val Asn Ser Leu Ser Lys Thr Ile
 50 55 60
 Gly Gln Leu Met Lys Glu Gly Lys Lys Glu Glu Ala Glu Val Ala Lys
 65 70 75 80
 Ala Arg Val Ala Glu Ile Lys Glu Ser Asn Lys Thr Leu Gln Ala Asp
 85 90 95
 Met Asp Gln Ala Ala Asn Asp Met Leu Asn Leu Leu Tyr Thr Ile Pro
 100 105 110
 Asn Ile Pro Tyr Asp Ser Val Pro Glu Gly Val Gly Ala Glu Asp Asn
 115 120 125
 Val Val Glu Lys Met Gly Gly Met Glu Thr Gln Leu Pro Thr Asp Ala
 130 135 140
 Leu Pro His Trp Glu Leu Ala Lys Lys Tyr Asp Leu Ile Asp Phe Asp
 145 150 155 160
 Leu Gly Val Lys Ile Thr Gly Ala Gly Phe Pro Val Tyr Lys Gly Lys
 165 170 175
 Gly Ala Gln Leu Gln Arg Ala Leu Ile Asn Phe Phe Leu Asp Glu Ala
 180 185 190

Arg Lys Ser Gly Tyr Thr Glu Ile Met Pro Pro Thr Val Val Asn Ala
 195 200 205
 Ala Ser Gly Tyr Gly Thr Gly Gln Leu Pro Asp Lys Glu Gly Gln Met
 210 215 220
 Tyr His Cys Glu Val Asp Asp Leu Tyr Leu Ile Pro Thr Ala Glu Val
 225 230 235 240
 Pro Val Thr Asn Ile Tyr Arg Asp Val Ile Leu Asp Glu Lys Gln Leu
 245 250 255
 Pro Ile Lys Asn Cys Ala Tyr Thr Gln Cys Phe Arg Arg Glu Ala Gly
 260 265 270
 Ser Tyr Gly Lys Asp Val Arg Gly Leu Asn Arg Leu His Glu Phe Ser
 275 280 285
 Lys Val Glu Leu Val Arg Ile Asp Lys Pro Glu His Ser Arg Gln Ser
 290 295 300
 His Gln Glu Met Leu Asp His Val Glu Gly Leu Leu Gln Lys Leu Glu
 305 310 315 320
 Leu Pro Tyr Arg Ile Leu Arg Leu Cys Gly Gly Asp Met Ser Phe Thr
 325 330 335
 Ala Ala Leu Cys Phe Asp Phe Glu Val Tyr Ser Glu Ala Gln Lys Arg
 340 345 350
 Trp Leu Glu Val Ser Ser Val Ser Asn Phe Asp Thr Tyr Gln Ala Asn
 355 360 365
 Arg Leu Lys Cys Arg Tyr Arg Ser Gly Glu Lys Lys Thr Glu Leu Cys
 370 375 380
 His Thr Leu Asn Gly Ser Ala Leu Ala Leu Pro Arg Ile Val Ala Ala
 385 390 395 400
 Leu Leu Glu Asn His Gln Thr Pro Glu Gly Ile Arg Ile Pro Lys Ala
 405 410 415
 Leu Val Pro Tyr Cys Gly Phe Asp Met Ile Asp
 420 425

<210> 8527

<211> 232

<212> PRT

<213> B.fragilis

<400> 8527

Ile Lys Asp Met His Val Phe Tyr Thr Pro Asp Ile Gln Thr Ser Thr
 1 5 10 15
 Glu Leu Pro Glu Glu Ala Gln His Cys Val Arg Val Leu Arg Leu
 20 25 30
 Thr Ala Gly Asp Glu Ile Ser Leu Thr Asp Gly Lys Gly Asn Phe Tyr
 35 40 45
 Arg Ala Glu Ile Ser Val Ala Thr His Lys Arg Cys Leu Val Asn Ile
 50 55 60
 Lys Glu Thr Ile Tyr Gln Glu Pro Leu Trp Asp Gly His Leu His Ile
 65 70 75 80
 Ala Met Ala Pro Thr Lys Asn Met Asp Arg Asn Glu Trp Phe Ala Glu
 85 90 95
 Lys Ala Thr Glu Ile Gly Phe Asp Glu Leu Thr Phe Leu Asn Cys Arg
 100 105 110
 Phe Ser Glu Arg Lys Val Ile Lys Thr Glu Arg Ile Glu Lys Ile Leu
 115 120 125
 Val Ser Ala Ile Lys Gln Ser Leu Lys Ala Arg Leu Pro Arg Leu Asn
 130 135 140
 Glu Met Thr Asp Phe Cys Thr Phe Ile Glu Lys Asp Phe Lys Gly Gln
 145 150 155 160
 Lys Phe Ile Ala His Cys Tyr Glu Gly Glu Lys Pro Leu Leu Lys Asp
 165 170 175

Val Leu Thr Lys Gly Glu Asp Ala Leu Val Leu Ile Gly Pro Glu Gly
 180 185 190
 Asp Phe Ser Glu Glu Glu Val Lys Lys Ala Ile Glu Lys Gly Phe Val
 195 200 205
 Pro Ile Ser Leu Gly Lys Ser Arg Leu Arg Thr Glu Thr Ala Ala Leu
 210 215 220
 Val Ala Cys His Thr Met Asn Met
 225 230

<210> 8528

<211> 496

<212> PRT

<213> B.fragilis

<400> 8528

Asn Gly Thr Met Leu Phe Asn Glu Leu Arg Leu His Gly Lys Leu Ala
 1 5 10 15
 Ala Lys Arg His Pro Met Tyr Glu Lys Asn Lys Ile Gly Lys Tyr Ile
 20 25 30
 Met Tyr Ala Ser Phe Ile Phe Trp Gly Ala Tyr Phe Ile Phe Ile Gly
 35 40 45
 Ile Gly Leu Ala Lys Ala Ile Ser Thr Glu Val Pro Asn Met Glu Ala
 50 55 60
 Tyr His Ile Leu Asn Ser Gly Leu Ile Phe Ala Leu Ala Leu Asp Phe
 65 70 75 80
 Val Ile Arg Phe Pro Phe Gln Lys Thr Pro Thr Gln Glu Val Lys Pro
 85 90 95
 Tyr Leu Leu Leu Pro Val Lys Arg Ser Arg Ile Leu Asp Phe Leu Leu
 100 105 110
 Leu Arg His Gly Leu Ser Ser Phe Asn Leu Ile Trp Leu Phe Leu Phe
 115 120 125
 Val Pro Phe Ala Ala Leu Thr Val Phe Pro Phe Tyr Gly Ile Ser Gly
 130 135 140
 Val Leu Thr Tyr Ser Ile Gly Ile Trp Leu Leu Met Val Phe Asn Gly
 145 150 155 160
 Tyr Trp Tyr Leu Leu Cys Arg Thr Leu Ile Asn Glu His Ile Trp Trp
 165 170 175
 Val Leu Leu Pro Ile Val Val Tyr Ser Gly Ile Ala Ile Ala Ile Phe
 180 185 190
 Ile Pro Gln Thr Gly Phe Ile Ser Asn Phe Phe Met Asn Leu Gly Glu
 195 200 205
 Gly Tyr Ile Glu Gly Asn Leu Leu Ala Tyr Leu Gly Thr Leu Ala Ala
 210 215 220
 Thr Val Leu Val Trp Cys Ile Asn Arg Lys Val Met Thr Gly Leu Ile
 225 230 235 240
 Tyr Asn Glu Ile Asn Lys Val Glu Asp Thr Lys Val Lys Thr Val Ser
 245 250 255
 Glu Tyr Arg Phe Leu Glu Arg Phe Gly Glu Val Gly Glu Tyr Met Arg
 260 265 270
 Leu Glu Leu Lys Met Leu Leu Arg Asn Lys Arg Cys Lys Ala Ser Leu
 275 280 285
 Arg Ser Val Ala Met Leu Val Ile Ile Phe Ser Ile Ile Leu Ser Phe
 290 295 300
 Ser Ser Thr Tyr Asp His Met Lys Ser Phe Val Gln Val Tyr Ser Phe
 305 310 315 320
 Leu Gly Phe Gly Met Val Ile Leu Ile Gln Leu Met Gly Phe Glu Gly
 325 330 335
 Asn Tyr Ile Asp Gly Leu Met Thr Arg Lys Glu Ser Ile Lys Ser Leu
 340 345 350

4670 8528 496 PRT B.fragilis

Leu Thr Ala Lys Tyr Tyr Ile Tyr Ser Leu Ala Glu Ile Ile Pro Leu
 355 360 365
 Ile Leu Leu Ile Pro Ala Phe Val Met Gly Lys Ala Ser Leu Leu Gly
 370 375 380
 Ala Val Ala Leu Ile Phe Leu Thr Thr Gly Pro Val Tyr Cys Ile Leu
 385 390 395 400
 Phe Gln Leu Ala Val Tyr Asn His Lys Thr Val Pro Leu Asn Glu Ser
 405 410 415
 Ile Thr Gly Lys Gln Ser Met Asn Thr Gly Met Gln Met Leu Ile Ser
 420 425 430
 Phe Gly Leu Phe Ile Val Pro Thr Thr Leu Tyr Gly Thr Leu Pro Met
 435 440 445
 Leu Leu Gly Gln Thr Trp Ala Tyr Ile Val Ile Leu Ile Ile Gly Leu
 450 455 460
 Gly Phe Thr Leu Thr Ser Pro Met Trp Ile Asn Asn Val Tyr Val Arg
 465 470 475 480
 Phe Met Gln Arg Arg Tyr Glu Asn Met Glu Gly Phe Arg Asp Ser Lys
 485 490 495

<210> 8529

<211> 264

<212> PRT

<213> B.fragilis

<400> 8529

Ile Ile Asn Met His Thr Arg Glu Glu Gln Met Glu Ala Phe Gly Arg
 1 5 10 15
 Phe Leu Asp Ile Leu Asp Glu Leu Arg Val Lys Cys Pro Trp Asp Arg
 20 25 30
 Lys Gln Thr Asn Glu Ser Leu Arg Pro Asn Thr Ile Glu Glu Thr Tyr
 35 40 45
 Glu Leu Cys Asp Ala Leu Met Arg Asn Asp Lys Lys Asp Ile Cys Lys
 50 55 60
 Glu Leu Gly Asp Val Leu Leu His Val Ala Phe Tyr Ala Lys Ile Gly
 65 70 75 80
 Ser Glu Thr Gly Asp Phe Asp Met Lys Asp Val Cys Asp Lys Leu Cys
 85 90 95
 Glu Lys Leu Ile Phe Arg His Pro His Val Phe Gly Glu Val Lys Ala
 100 105 110
 Glu Thr Ala Gly Gln Val Ser Glu Asn Trp Glu Gln Leu Lys Leu Lys
 115 120 125
 Glu Lys Asp Gly Asn Lys Ser Val Leu Ser Gly Val Pro Ala Ala Leu
 130 135 140
 Pro Ser Leu Ile Lys Ala Tyr Arg Ile Gln Asp Lys Ala Arg Asn Val
 145 150 155 160
 Gly Phe Asp Trp Glu Arg Glu Gln Val Trp Asp Lys Val Lys Glu
 165 170 175
 Glu Ile Ala Glu Phe Gln Val Glu Val Ala Asn Met Asp Lys Asp Lys
 180 185 190
 Ala Glu Ala Glu Phe Gly Asp Val Met Phe Ser Leu Ile Asn Ala Ala
 195 200 205
 Arg Leu Tyr Lys Ile Asn Pro Asp Asn Ala Leu Glu Arg Thr Asn Gln
 210 215 220
 Lys Phe Ile Arg Arg Phe Asn Tyr Leu Glu Asp His Thr Ile Lys Glu
 225 230 235 240
 Gly Lys Asn Leu Lys Asp Met Ser Leu Asp Glu Met Asp Ala Ile Trp
 245 250 255
 Asn Glu Ala Lys Lys Gly Leu
 260

<210> 8530
 <211> 216
 <212> PRT
 <213> B.fragilis

<400> 8530

Val	Tyr	Thr	Met	Lys	Gln	Ile	Ile	Ile	Ser	Ile	Trp	Ile	Ala	Leu	Leu
1				5					10					15	
Thr	Leu	Pro	Val	Phe	Ala	Gln	Gln	Gln	Met	Gln	Ala	Lys	Val	Val	Leu
			20					25					30		
Asp	Lys	Thr	Ala	Ala	Thr	Phe	Glu	Lys	Ala	Gly	Gly	Ile	Cys	Ala	Glu
		35					40					45			
Phe	Asn	Val	Thr	Val	Phe	Asn	Lys	Ser	Arg	Met	Ala	Gly	Gln	Ser	Ala
	50				55						60				
Gly	Val	Ile	Glu	Leu	Lys	Gly	Glu	Lys	Phe	Val	Leu	Lys	Thr	Asp	Asp
65					70				75					80	
Gly	Ile	Thr	Trp	Phe	Asp	Gly	Lys	Thr	Gln	Trp	Ser	Tyr	Leu	Arg	Ser
				85					90					95	
Ser	Asp	Glu	Val	Asn	Ile	Ser	Asn	Pro	Thr	Gly	Thr	Glu	Leu	Gln	Gly
			100					105					110		
Leu	Asn	Pro	Tyr	Ala	Leu	Leu	Gln	Ile	Tyr	Arg	His	Gly	Phe	Asp	Tyr
		115					120					125			
Lys	Ile	Gly	Ser	Leu	Lys	Asn	Phe	Gly	Gly	Lys	Pro	Val	Tyr	Glu	Val
	130					135					140				
Val	Leu	Thr	Ala	Thr	Asp	Lys	Lys	Arg	Asp	Leu	Ser	Arg	Ile	Val	Leu
145					150					155					160
Tyr	Val	Ser	Lys	Asp	Thr	Tyr	Gln	Pro	Leu	Phe	Ile	Met	Met	Glu	Gln
				165					170					175	
Arg	Asp	Lys	Ser	Arg	Ser	Glu	Ile	Thr	Val	Thr	Gly	Tyr	Gln	Thr	Gly
			180				185						190		
Leu	Lys	Tyr	Ala	Asp	Gly	Met	Phe	Val	Phe	Asp	Lys	Lys	Gln	Tyr	Pro
		195				200						205			
His	Ala	Glu	Val	Ile	Asp	Leu	Arg								
		210				215									

<210> 8531
 <211> 884
 <212> PRT
 <213> B.fragilis

<400> 8531

Thr	Asn	Lys	Ile	Asp	Arg	Tyr	Asn	Met	Glu	Leu	Ala	Ser	Lys	Tyr	Asn
1				5					10					15	
Pro	Ala	Asp	Val	Glu	Gly	Lys	Trp	Tyr	Gln	Tyr	Trp	Leu	Asp	His	Lys
			20					25					30		
Leu	Phe	Ser	Ser	Lys	Pro	Asp	Gly	Arg	Glu	Pro	Tyr	Thr	Ile	Val	Ile
		35					40					45			
Pro	Pro	Pro	Asn	Val	Thr	Gly	Val	Leu	His	Met	Gly	His	Met	Leu	Asn
		50				55					60				
Asn	Thr	Ile	Gln	Asp	Ile	Leu	Val	Arg	Arg	Ala	Arg	Met	Glu	Gly	Lys
65					70					75				80	
Asn	Ala	Cys	Trp	Val	Pro	Gly	Thr	Asp	His	Ala	Ser	Ile	Ala	Thr	Glu
			85					90					95		
Ala	Lys	Val	Val	Asn	Lys	Leu	Ala	Ala	Gln	Gly	Ile	Lys	Lys	Thr	Asp
			100				105						110		
Leu	Ser	Arg	Asp	Glu	Phe	Leu	Lys	His	Ala	Trp	Ala	Trp	Thr	Asp	Glu
		115					120					125			
His	Gly	Gly	Ile	Ile	Leu	Lys	Gln	Leu	Arg	Lys	Leu	Gly	Ala	Ser	Cys

130	135	140
Asp Trp Asp Arg Thr Ala Phe Thr Met Asp Glu Lys Arg Ser Glu Ser		
145	150	155
Val Leu Lys Val Phe Val Asp Leu Tyr Asn Lys Gly Leu Ile Tyr Arg		160
	165	170
Gly Val Arg Met Val Asn Trp Asp Pro Lys Ala Leu Thr Ala Leu Ser		175
	180	185
Asp Glu Glu Val Ile Tyr Lys Glu His Gly Lys Leu Phe Tyr Leu		190
	195	200
Arg Tyr Lys Ile Glu Gly Glu Asp Gly Tyr Ala Val Val Ala Thr Thr		205
	210	215
Arg Pro Glu Thr Ile Met Gly Asp Thr Ala Met Cys Ile Asn Pro Asn		220
225	230	235
Asp Pro Lys Asn Gln His Leu Lys Gly Lys Lys Val Ile Val Pro Leu		240
	245	250
Val Gly Arg Val Ile Pro Val Ile Glu Asp Asp Tyr Val Asp Ile Glu		255
	260	265
Phe Gly Thr Gly Cys Leu Lys Val Thr Pro Ala His Asp Val Asn Asp		270
	275	280
Tyr Met Leu Gly Glu Lys Tyr Asn Leu Pro Ser Ile Asp Ile Phe Asn		285
	290	295
Asp Asn Gly Thr Ile Ser Glu Ala Ala Gly Met Tyr Ile Gly Met Asp		300
305	310	315
Arg Phe Asp Val Arg Lys Gln Ile Glu Lys Asp Leu Glu Ala Ala Gly		320
	325	330
Leu Leu Glu Lys Thr Glu Ala Tyr Thr Asn Lys Val Gly Tyr Ser Glu		335
	340	345
Arg Thr Asn Val Val Ile Glu Pro Lys Leu Ser Met Gln Trp Phe Leu		350
	355	360
Lys Met Glu His Leu Ala Gln Ile Ala Leu Glu Pro Val Met Lys Asp		365
	370	375
Asp Ile Lys Phe Tyr Pro Ala Lys Tyr Lys Asn Thr Tyr Arg His Trp		380
385	390	395
Met Glu Asn Ile Lys Asp Trp Cys Ile Ser Arg Gln Leu Trp Trp Gly		400
	405	410
His Arg Ile Pro Ala Tyr Phe Leu Pro Glu Gly Gly Tyr Val Val Ala		415
	420	425
Val Thr Asp Glu Glu Ala Leu Lys Leu Ala Arg Glu Lys Thr Gly Asn		430
	435	440
Pro Asn Leu Lys Met Thr Asp Leu Arg Gln Asp Glu Asp Cys Leu Asp		445
	450	455
Thr Trp Phe Ser Ser Trp Leu Trp Pro Ile Ser Leu Phe Asp Gly Ile		460
465	470	475
Asn Asn Pro Gly Asn Glu Glu Ile Asn Tyr Tyr Tyr Pro Thr Ser Asp		480
	485	490
Leu Val Thr Gly Pro Asp Ile Ile Phe Phe Trp Val Ala Arg Met Ile		495
	500	505
Met Ala Gly Tyr Glu Tyr Glu Gly Lys Met Pro Phe Lys Asn Val Tyr		510
	515	520
Phe Thr Gly Ile Val Arg Asp Lys Leu Gly Arg Lys Met Ser Lys Ser		525
	530	535
Leu Gly Asn Ser Pro Asp Pro Leu Glu Leu Ile Glu Lys Tyr Gly Ala		540
545	550	555
Asp Gly Val Arg Met Gly Met Met Leu Ser Ala Pro Ala Gly Asn Asp		560
	565	570
Ile Leu Phe Asp Asp Ala Leu Cys Glu Gln Gly Arg Asn Phe Cys Asn		575
	580	585
Lys Ile Trp Asn Ala Phe Arg Leu Val Lys Gly Trp Glu Asn Gly Met		590
	595	600
		605

130 135 140
 145 150 155
 160 165 170
 175 180 185
 190 195 200
 205 210 215
 220 225 230
 235 240 245
 250 255 260
 265 270 275
 280 285 290
 295 300 305
 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395
 400 405 410
 415 420 425
 430 435 440
 445 450 455
 460 465 470
 475 480 485
 490 495 500
 505 510 515
 520 525 530
 535 540 545
 550 555 560
 565 570 575
 580 585 590
 595 600 605

Gly	Thr	Ile	Asp	Ile	Pro	Ala	Asp	Ala	His	Leu	Ala	Val	Gln	Trp	Phe
610						615					620				
Asp	Gln	Arg	Leu	Asp	Ala	Ala	Ala	Val	Glu	Val	Ala	Asp	Leu	Phe	Ser
625					630					635					640
Lys	Tyr	Arg	Leu	Ser	Glu	Ala	Leu	Met	Leu	Ile	Tyr	Lys	Leu	Phe	Trp
				645					650						655
Asp	Glu	Phe	Ser	Ser	Trp	Leu	Leu	Glu	Ile	Val	Lys	Pro	Ala	Tyr	Gly
			660					665					670		
Gln	Pro	Val	Asn	Gly	Phe	Ile	Tyr	Ser	Met	Thr	Leu	Ser	Ala	Phe	Glu
		675					680					685			
Arg	Leu	Leu	Ala	Met	Leu	His	Pro	Phe	Met	Pro	Phe	Ile	Thr	Glu	Glu
	690					695					700				
Leu	Trp	Gln	Gln	Leu	Arg	Glu	Arg	Glu	Pro	Gly	Ala	Ser	Leu	Met	Val
705					710					715					720
Gln	Pro	Leu	Gly	Glu	Pro	Gly	Glu	Val	Asn	Glu	Glu	Phe	Leu	Gln	Gln
				725					730						735
Phe	Glu	Thr	Ala	Lys	Glu	Ile	Ile	Ser	Ser	Val	Arg	Thr	Ile	Arg	Leu
			740					745					750		
Gln	Lys	Asn	Ile	Ala	Leu	Lys	Glu	Pro	Leu	Glu	Leu	Gln	Val	Val	Gly
	755						760					765			
Ala	Asn	Pro	Val	Glu	Lys	Met	Asn	Pro	Val	Ile	Arg	Lys	Met	Cys	Asn
	770					775					780				
Leu	Ser	Ala	Ile	Glu	Val	Val	Asp	Ala	Lys	Ala	Asp	Gly	Ala	Ser	Ser
785					790					795					800
Phe	Met	Ile	Gly	Thr	Thr	Glu	Phe	Ala	Val	Pro	Leu	Gly	Asn	Met	Ile
				805					810					815	
Asp	Val	Asp	Ala	Glu	Ile	Ala	Arg	Met	Glu	Ala	Glu	Leu	Lys	His	Lys
			820					825					830		
Glu	Gly	Phe	Leu	Gln	Gly	Val	Leu	Lys	Lys	Leu	Ser	Asn	Glu	Lys	Phe
		835					840					845			
Val	Asn	Asn	Ala	Pro	Ala	Ala	Val	Ile	Glu	Met	Glu	Arg	Lys	Lys	Gln
	850					855					860				
Ala	Asp	Ala	Glu	Ser	Ile	Ile	Gln	Ser	Leu	Lys	Glu	Ser	Ile	Ala	Ser
865					870					875					880
Leu	Lys	Asn	Val												

<210> 8532

<211> 317

<212> PRT

<213> B.fragilis

<400> 8532

Lys	Tyr	Glu	Ile	Ile	Asn	Ile	Ile	Ser	Met	Ser	Val	Glu	Pro	Gly	Lys
1				5				10						15	
Trp	Gly	Val	Ile	Tyr	Asn	Pro	Lys	Ala	Gly	Thr	Arg	Lys	Val	Gln	Lys
			20					25					30		
Arg	Trp	Lys	Glu	Ile	Lys	Glu	Tyr	Met	Asp	Ser	Lys	Gly	Val	Ser	Tyr
		35					40					45			
Asp	Tyr	Val	Gln	Ser	Glu	Gly	Phe	Gly	Ser	Val	Glu	Arg	Leu	Ala	Gly
	50					55					60				
Ile	Leu	Ala	Asn	Asn	Gly	Tyr	Arg	Thr	Ile	Val	Val	Val	Gly	Gly	Asp
65					70					75					80
Gly	Ala	Leu	Asn	Asp	Ala	Ile	Asn	Gly	Ile	Met	Ser	Ser	Asn	Ala	Glu
			85					90					95		
Lys	Lys	Glu	Glu	Ile	Ala	Ile	Gly	Ile	Ile	Pro	Asn	Gly	Ile	Gly	Asn
			100					105					110		
Asp	Phe	Ala	Arg	Tyr	Trp	Glu	Leu	Asn	Leu	Glu	Tyr	Lys	Gln	Ala	Val
		115					120					125			

Ala Val Pro Lys Met Tyr Thr Gln Gln Ile Ser Leu Gly Leu Ser Ser
 225 230 235 240
 Gln Ile Asp Leu Ser Glu Val Lys Ala Val Gly Asn Leu Asn Phe Glu
 245 250 255
 Lys Gly Lys Ile Ala Leu Gln Ile Glu Thr Tyr Ser Asp Asn Ala Glu
 260 265 270
 Thr Asp Ala Leu Leu Lys Lys Gln Ala Gln Ala Val Lys Lys Leu Asn
 275 280 285
 Thr Thr Phe Leu Gln Asn Phe Pro Glu Ser Thr Leu Ala Phe Leu Asn
 290 295 300
 Ile Gly Val Asn Gly Ala Ala Phe Tyr Asp Leu Leu Phe Asn Asn Glu
 305 310 315 320
 Glu Phe Arg Arg Asn Val Ser Leu Ala Lys Ala Asp Glu Val Lys Ser
 325 330 335
 Leu Phe Ala Ser Phe Asp Gly Asp Ile Ser Ile Gly Leu Ile Asn Val
 340 345 350
 Thr Leu Asn Ser Val Pro Thr Phe Ala Ala Tyr Ala Asp Ala Lys Asp
 355 360 365
 Gly Asn Ala Leu Lys Ala Leu Tyr Asp Asn Lys Lys Gln Leu Lys Leu
 370 375 380
 Gly Lys Asn Glu Asp Ile Ile Gln Leu Gly Glu Asn Glu Tyr Val Tyr
 385 390 395 400
 Lys Ser Arg Ala Thr Asn Val Phe Phe Gly Ile Arg Asn Lys Gln Met
 405 410 415
 Tyr Ala Thr Asn Asp Glu Leu Leu Tyr Lys Ser Ile Ser Lys Pro Val
 420 425 430
 Glu Lys Ser Ile Lys Asp Ala Gly Tyr Val Ser Asp Met Lys Gly Lys
 435 440 445
 Asn Val Phe Phe Val Ile Asn Met Asp Ala Ile Leu Asp Leu Pro Val
 450 455 460
 Val Lys Met Met Ala Gly Phe Gly Gly Glu Glu Tyr Gln Thr Tyr Tyr
 465 470 475 480
 Lys Leu Ala Ser Lys Ile Ser Tyr Ile Glu Ala Phe Ser Asp Ser Glu
 485 490 495
 Gly Lys Thr Glu Thr Ala Ile Leu Leu Lys Asn Lys Asp Asp Asn Ala
 500 505 510
 Leu Lys Gln Ile Val Asp Phe Ala Lys Gln Phe Ala Gly Met
 515 520 525

<210> 8534
 <211> 191
 <212> PRT
 <213> B.fragilis

<400> 8534
 His Ile Arg Ile Thr Asn Glu Pro Met Asn Pro Tyr Asn Glu Arg Glu
 1 5 10 15
 Val Leu Ala Leu Leu Gln Asp Glu Arg Thr Gln Lys Gln Gly Phe Glu
 20 25 30
 Arg Ile Val Ser Gln Tyr Ser Glu Gln Leu Tyr Trp Gln Ile Arg Arg
 35 40 45
 Met Val Leu Ser His Asp Asp Ala Asn Asp Leu Leu Gln Asn Thr Phe
 50 55 60
 Ile Lys Ala Trp Ile Asn Ile Asp Tyr Phe Arg Ala Glu Ala Lys Leu
 65 70 75 80
 Ser Thr Trp Leu Tyr Arg Ile Ala Leu Asn Glu Cys Ile Thr Phe Leu
 85 90 95
 Asn Lys Gln Arg Ala Met Asn Thr Val Ala Ile Asp Asp Pro Glu Ala
 100 105 110

Asp	Val	Thr	Gln	Lys	Leu	Glu	Ser	Asp	Pro	Tyr	Phe	Ser	Gly	Asp	Arg
	115						120					125			
Ala	Glu	Leu	Leu	Leu	Gln	Lys	Ala	Leu	Leu	Thr	Leu	Pro	Glu	Lys	Gln
	130					135					140				
Arg	Met	Val	Phe	Asn	Leu	Lys	Tyr	Tyr	Gln	Glu	Met	Lys	Tyr	Glu	Glu
145					150					155					160
Met	Ser	Glu	Ile	Phe	Gly	Thr	Ser	Val	Gly	Ala	Leu	Lys	Ala	Ser	Tyr
				165					170					175	
His	His	Ala	Val	Lys	Lys	Ile	Glu	Lys	Phe	Leu	Glu	Glu	Ala	Asn	
		180					185						190		

<210> 8535

<211> 218

<212> PRT

<213> B.fragilis

<400> 8535

Lys	Asn	Met	Ile	Leu	Lys	Arg	Thr	Ile	Ser	Lys	Glu	Glu	Val	Lys	Glu
1			5					10						15	
Met	Pro	Lys	Ala	Ala	Phe	Pro	Gly	Arg	Ile	His	Val	Ile	Gln	Thr	Glu
			20				25						30		
Ser	Glu	Ala	Gln	Lys	Ala	Val	Ala	Tyr	Leu	Gln	Ser	Gln	Ala	Ile	Leu
		35					40					45			
Gly	Ile	Asp	Ser	Glu	Thr	Arg	Pro	Ser	Phe	Thr	Lys	Gly	His	Ser	His
	50					55					60				
Lys	Val	Ala	Leu	Leu	Gln	Ile	Ser	Ser	Asp	Glu	Cys	Cys	Phe	Leu	Phe
65					70					75					80
Arg	Leu	Asn	Met	Thr	Gly	Leu	Thr	Gln	Pro	Ile	Ile	Glu	Leu	Leu	Glu
				85					90					95	
Asp	Pro	Lys	Val	Ile	Lys	Val	Gly	Leu	Ser	Leu	Lys	Asp	Asp	Phe	Met
			100				105						110		
Met	Leu	His	Lys	Arg	Ala	Pro	Phe	Asn	Gln	Gln	Ala	Cys	Ile	Glu	Leu
		115					120					125			
Gln	Glu	Tyr	Val	Arg	Pro	Phe	Gly	Ile	Gln	Asp	Lys	Ser	Leu	Gln	Lys
	130					135					140				
Ile	Tyr	Gly	Ile	Leu	Phe	Ser	Glu	Lys	Ile	Ser	Lys	Ser	Gln	Arg	Leu
145				150						155					160
Ser	Asn	Trp	Glu	Ala	Asp	Val	Leu	Thr	Asp	Ala	Gln	Lys	Gln	Tyr	Ala
			165						170					175	
Ala	Thr	Asp	Ala	Trp	Ala	Cys	Leu	Asn	Ile	Tyr	His	Leu	Leu	Glu	Glu
			180					185					190		
Leu	Lys	Arg	Thr	Gly	Asn	Tyr	Glu	Leu	Ala	Pro	Glu	Glu	Glu	Ala	Thr
		195					200					205			
Glu	Lys	Val	Lys	Val	Gly	Ser	Asp	Gln	Gln						
	210					215									

<210> 8536

<211> 287

<212> PRT

<213> B.fragilis

<400> 8536

Cys	Ile	Arg	Met	Glu	Leu	Leu	Leu	Gly	Ile	Val	Ile	Val	Val	Thr	Cys
1				5					10					15	
Trp	Met	Val	Val	Arg	Ile	Ile	Arg	Ser	Ser	Lys	Asn	Gln	Glu	Gly	Tyr
			20					25					30		
Lys	Arg	Trp	Arg	Ala	Gly	Asn	Tyr	Ala	Ser	Glu	Asn	Pro	Tyr	Ala	Lys
		35				40					45				
Glu	Lys	Ala	Ser	Gly	Pro	Leu	Ser	Gln	Gly	Leu	Phe	Ser	Lys	Arg	Val

50		55		60
Arg Thr Thr Gly Ala	Arg Arg Phe Asp Asp Gly Ala Ile Arg Trp Cys			
65	70	75	80	
Ala Asn Leu Leu Ala	Thr Glu Glu Ser Arg Leu Arg Glu Val Leu Asp			
85	90	95		
Tyr Ile Pro Arg Gln	Tyr Thr Cys Phe His Val Arg Lys Arg Ser Gly			
100	105	110		
Gly Phe Arg Tyr Ile	Ser Ala Pro Ala Gly Asp Phe Arg Ser Met Gln			
115	120	125		
Gln Thr Ile Tyr His	Arg Ile Leu Leu Leu Ala Asn Ile His Pro Ala			
130	135	140		
Val Thr Gly Phe Cys	Pro Gly Lys Ser Val Ser Asp Asn Ala Arg Val			
145	150	155	160	
His Leu Gly Arg Lys	Asn Val Leu Lys Val Asp Leu His Asp Phe Phe			
165	170	175		
Pro Ser Ile Arg Ser	Pro Arg Val Arg Ala Ala Phe Arg Glu Met Gly			
180	185	190		
Tyr Ser Arg Pro Ile	Ala Lys Val Leu Ala Glu Leu Cys Cys Leu Arg			
195	200	205		
Cys Phe Leu Pro Gln	Gly Ala Pro Thr Ser Pro Ala Leu Ser Asn Ile			
210	215	220		
Ile Ala Tyr Pro Met	Asp Lys Lys Met Met Ala Leu Ala Gly Glu Tyr			
225	230	235	240	
Gly Leu Val Tyr Thr	Arg Tyr Ala Asp Asp Leu Thr Phe Ser Gly Asp			
245	250	255		
Tyr Leu Pro Lys Asp	Glu Val Leu Val Arg Ile His Arg Ile Ile Arg			
260	265	270		
Glu Glu Gly Phe His	Asp Glu Arg Gln Lys Asp Pro Leu Leu Val			
275	280	285		

<210> 8537

<211> 838

<212> PRT

<213> B.fragilis

<400> 8537

Ser Tyr Ser Leu Arg	Phe Ile Ile His Met Ala Lys Lys Lys Ser Asp
1	5 10 15
Lys Glu Ala Glu Gln	Lys Pro Ala Ser Thr Lys Lys Tyr Val Ala Phe
20	25 30
Phe Arg Asn Glu Thr	Ile His Phe Val Ile Gly Leu Val Leu Val Ile
35	40 45
Phe Ser Val Tyr Leu	Leu Leu Ala Phe Thr Ser Phe Phe Thr Gly
50	55 60
Ala Ala Asp Gln Ser	Ile Ile Asp Ser Gly Asn Ala Gln Asp Leu Ala
65	70 75 80
Ala Val Asn Asn His	Val Lys Asn Tyr Ala Gly Ser Arg Gly Ala Gln
85	90 95
Leu Ala Ser Tyr Leu	Ile Asn Asp Cys Phe Gly Ile Ser Ser Phe Phe
100	105 110
Ile Leu Ile Tyr Leu	Ala Val Ala Gly Leu Lys Leu Met Arg Val Arg
115	120 125
Val Val Arg Leu Trp	Lys Trp Phe Ile Gly Cys Ser Leu Leu Leu Ile
130	135 140
Trp Phe Ser Val Phe	Leu Gly Phe Val Phe Met Asp His Tyr Gln Asp
145	150 155 160
Ser Phe Ile Tyr Leu	Gly Gly Leu His Gly Tyr Asn Ile Ser Asn Trp
165	170 175
Leu Ile Ser Gln Val	Gly Ile Pro Gly Val Trp Leu Ile Leu Leu Ala

	180		185		190
Thr Gly Ile Cys Phe Leu Ile Tyr Met Ser Ala Arg Thr Ile Ile Trp					
195		200		205	
Leu Arg Lys Leu Phe Ser Leu Ser Phe Leu Lys Arg Lys Gln Lys Glu					
210	215		220		
Glu Leu Ala Glu Val Thr Gln Ala Pro Gln Ser His Glu Tyr Asp Asn					
225	230		235		240
Pro Lys Pro Gln Glu Val Glu Phe Asp Val Asn Arg Thr Phe Arg Gln					
	245		250		255
Glu Val Pro Val Lys Lys Val Glu Thr Thr Val Val Ser Glu Thr Pro					
	260		265		270
Val Glu Ser Ser Thr Glu Met Pro Val Thr Pro Glu Asp Arg Asp Val					
	275		280		285
Thr Ser Asp Gly Asp Val Thr Met Thr Phe Glu Gln Thr Ala Pro Asp					
	290		295		300
Pro Val Pro Pro Phe Arg Ala Ala Ser Ala Asp Lys Glu Pro Glu Phe					
305	310		315		320
Glu Ile Glu Pro Ala Ala Asp Asp Glu Asn Tyr Gln Gly Ala Glu Thr					
	325		330		335
Glu Pro Tyr Asn Pro Lys Leu Asp Leu Glu Asn Tyr His Phe Pro Thr					
	340		345		350
Ile Asp Leu Met Lys His Tyr Glu Asn Ser Glu Pro Thr Ile Asn Met					
	355		360		365
Glu Glu Gln Asn Ala Asn Lys Asp Arg Ile Ile Asn Thr Leu Arg Ser					
	370		375		380
Phe Gly Ile Glu Ile Ser Thr Ile Lys Ala Thr Val Gly Pro Thr Val					
385	390		395		400
Thr Leu Tyr Glu Ile Thr Pro Glu Gln Gly Val Arg Ile Ser Lys Ile					
	405		410		415
Arg Gly Leu Glu Asp Asp Ile Ala Leu Ser Leu Ser Ala Leu Gly Ile					
	420		425		430
Arg Ile Ile Ala Pro Ile Pro Gly Lys Gly Thr Ile Gly Ile Glu Val					
	435		440		445
Pro Asn Ser Asn Pro Lys Ile Val Ser Gly Gln Ser Ile Ile Gly Ser					
	450		455		460
Lys Lys Phe Gln Glu Ser Thr Tyr Asp Leu Pro Ile Ala Leu Gly Lys					
465	470		475		480
Thr Ile Thr Asn Glu Val Phe Met Val Asp Leu Cys Lys Met Pro His					
	485		490		495
Val Leu Val Ala Gly Ala Thr Gly Gln Gly Lys Ser Val Gly Leu Asn					
	500		505		510
Ala Ile Ile Thr Ser Leu Leu Tyr Lys Lys His Pro Ala Glu Leu Lys					
	515		520		525
Phe Val Leu Val Asp Pro Lys Lys Val Glu Phe Ser Ile Tyr Ser Val					
	530		535		540
Ile Glu His His Phe Leu Ala Lys Leu Pro Asp Gly Glu Asp Ala Ile					
545	550		555		560
Ile Thr Asp Val Thr Lys Val Val Gln Thr Leu Asn Ser Val Cys Val					
	565		570		575
Glu Met Asp Ser Arg Tyr Asp Leu Leu Lys Met Ala His Val Arg Asn					
	580		585		590
Ile Lys Glu Tyr Asn Glu Lys Phe Ile Asn Arg Arg Leu Asn Pro Glu					
	595		600		605
Lys Gly His Lys Phe Met Pro Tyr Ile Val Val Val Ile Asp Glu Phe					
	610		615		620
Gly Asp Leu Ile Met Thr Ala Gly Lys Glu Ile Glu Leu Pro Ile Ala					
625	630		635		640
Arg Ile Ala Gln Leu Ala Arg Ala Val Gly Ile His Met Ile Ile Ala					
	645		650		655

180 185 190
 195 200 205
 210 215 220
 225 230 235
 240 245 250
 255 260 265
 270 275 280
 285 290 295
 300 305 310
 315 320 325
 330 335 340
 345 350 355
 360 365 370
 375 380 385
 390 395 400
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475
 480 485 490
 495 500 505
 510 515 520
 525 530 535
 540 545 550
 555 560 565
 570 575 580
 585 590 595
 600 605 610
 615 620 625
 630 635 640
 645 650 655

Thr Gln Arg Pro Thr Thr Asn Ile Ile Thr Gly Thr Ile Lys Ala Asn
 660 665 670
 Phe Pro Ala Arg Ile Ala Phe Arg Val Ser Ala Met Met Asp Ser Arg
 675 680 685
 Thr Ile Leu Asp Arg Pro Gly Ala Asn Gln Leu Ile Gly Arg Gly Asp
 690 695 700
 Met Leu Phe Leu Gln Gly Ala Asp Pro Val Arg Val Gln Cys Ala Phe
 705 710 715 720
 Ile Asp Thr Pro Glu Val Glu Glu Ile Thr Lys Tyr Ile Ser Arg Gln
 725 730 735
 Gln Gly Tyr Pro Thr Ala Phe Phe Leu Pro Glu Tyr Val Ser Glu Asp
 740 745 750
 Ser Gly Ser Asp Leu Gly Glu Val Asp Met Gly Arg Leu Asp Pro Leu
 755 760 765
 Phe Glu Glu Ala Ala Arg Leu Ile Val Ile His Gln Gln Gly Ser Thr
 770 775 780
 Ser Leu Ile Gln Arg Lys Phe Ser Ile Gly Tyr Asn Arg Ala Gly Arg
 785 790 795 800
 Leu Met Asp Gln Leu Glu Lys Ala Gly Ile Val Gly Pro Ser Gln Gly
 805 810 815
 Ser Lys Ala Arg Asp Val Leu Cys Val Asp Glu Asn Asp Leu Glu Met
 820 825 830
 Arg Leu Asn Asn Ile Gln
 835

<210> 8538
 <211> 134
 <212> PRT
 <213> B.fragilis

<400> 8538
 Leu Ile Ile Leu Asn Thr Lys Asn Leu Lys Leu Lys Lys Asp Glu Pro
 1 5 10 15
 Leu Met Met Ile Glu Val Leu Lys Ser Lys Ile His Cys Ala Arg Val
 20 25 30
 Thr Glu Ala Asn Leu Asn Tyr Met Gly Ser Ile Thr Ile Asp Glu Asn
 35 40 45
 Leu Leu Asp Ala Ala Asn Met Ile Ala Gly Glu Lys Val Tyr Ile Ala
 50 55 60
 Asp Asn Asn Asn Gly Glu Arg Phe Glu Thr Tyr Ile Ile Lys Gly Glu
 65 70 75 80
 Arg Gly Ser Gly Lys Ile Cys Leu Asn Gly Ala Ala Ala Arg Lys Val
 85 90 95
 Gln Pro Asp Asp Ile Val Ile Ile Met Ser Tyr Ala Leu Met Asp Phe
 100 105 110
 Glu Glu Ala Lys Ser Phe Lys Pro Thr Val Ile Phe Pro Asp Pro Ala
 115 120 125
 Thr Asn Ser Val Val Lys
 130

<210> 8539
 <211> 310
 <212> PRT
 <213> B.fragilis

<400> 8539
 Phe Thr Ile Phe Leu Leu Tyr Met Val Asn Tyr Gly Leu Phe Cys Thr
 1 5 10 15
 Val Phe Arg Thr Thr Lys Asn His Lys Pro Ile Lys Met Lys Val Ile

20 25 30
 His Thr Ile Lys Asp Leu Gln Ala Glu Leu Ser Val Leu Lys Ala Gln
 35 40 45
 Gly Lys Lys Val Gly Leu Val Pro Thr Met Gly Ala Leu His Ala Gly
 50 55 60
 His Ala Ser Leu Val Lys Arg Ser Val Asn Glu Asn Glu Val Thr Val
 65 70 75 80
 Val Ser Val Phe Val Asn Pro Thr Gln Phe Asn Asp Lys Asn Asp Leu
 85 90 95
 Val Lys Tyr Pro Arg Thr Leu Asp Ala Asp Cys Lys Leu Leu Glu Ala
 100 105 110
 Cys Gly Ala Thr Tyr Ala Phe Ala Pro Ser Val Glu Glu Met Tyr Pro
 115 120 125
 Glu Pro Asp Thr Arg Gln Phe Ser Tyr Ala Pro Leu Asp Thr Val Met
 130 135 140
 Glu Gly Ala Phe Arg Pro Gly His Phe Asn Gly Val Cys Gln Ile Val
 145 150 155 160
 Ser Lys Leu Phe Glu Ala Val Lys Pro His Arg Ala Tyr Phe Gly Glu
 165 170 175
 Lys Asp Phe Gln Gln Leu Ala Ile Ile Arg Glu Met Val Arg Gln Met
 180 185 190
 Gln Phe Asp Leu Glu Ile Val Gly Cys Pro Ile Val Arg Glu Glu Asp
 195 200 205
 Gly Leu Ala Leu Ser Ser Arg Asn Ala Arg Leu Ser Ala Glu Glu Arg
 210 215 220
 Glu Asn Ala Leu Lys Ile Ser Gln Thr Leu Phe Lys Ser Arg Thr Phe
 225 230 235 240
 Ala Ala Thr His Thr Val Ser Glu Thr Leu Lys Phe Val Glu Asp Ala
 245 250 255
 Ile Ala Ala Val Pro Gly Leu Arg Leu Glu Tyr Phe Glu Ile Val Asp
 260 265 270
 Gly Asn Thr Leu Gln Lys Val Asp Asn Trp Asn Gln Thr Ser Tyr Val
 275 280 285
 Val Gly Cys Ile Thr Val Phe Cys Gly Asp Val Arg Leu Ile Asp Asn
 290 295 300
 Ile Lys Tyr Lys Glu Ser
 305 310

<210> 8540

<211> 288

<212> PRT

<213> B.fragilis

<400> 8540

Asn Arg Leu Ser Leu Leu Arg Ser Ile Ile Cys Asn Met Cys Asn Leu
 1 5 10 15
 Ser Asp Glu Ser Lys Gln Phe Glu Met Thr Pro Pro Ser Ser Asn Leu
 20 25 30
 Ser Ser Leu Phe Pro Thr Gly Arg Ala Val Arg Asn Pro Leu Gly Lys
 35 40 45
 Val Tyr Phe Val Val Ile Leu Lys Gly Lys Ala Met Val Arg Ile Asp
 50 55 60
 Gly Lys Ser Met Leu Leu Pro Glu Arg Thr Phe Leu Phe Leu Pro Pro
 65 70 75 80
 Gly His Leu Leu Leu Arg Leu Ser Cys Thr Gln Asp Phe Leu Phe Gln
 85 90 95
 Tyr Leu Ser Phe Ser Phe Asp Phe Leu Ser Asp Phe Pro Leu Leu Leu
 100 105 110
 Lys Ala Asp Ile Ser Asn Gln Val Thr Asn Ala Pro Cys Leu Pro Met

115	120	125
Ser Pro Glu Asp Phe Ser	Leu Ile Lys Met Tyr Tyr	His Phe Ile Tyr
130	135	140
His Arg Tyr Ser Asp Ala	Glu Cys Pro Ser Glu Val	Ile Lys Gly Met
145	150	155
Leu Phe Ser Leu Val Leu	Glu Val Cys Arg Met Tyr	Ser Gly Arg Asn
165	170	175
Ile Ser Val Glu Met Ser	Arg Gln Asp Lys Leu Val	Asp Gly Phe Phe
180	185	190
Ser Leu Leu His Lys Tyr	Cys Thr Gln Glu Arg Met	Ala Ala Phe Tyr
195	200	205
Ala Ser Arg Leu Cys Ile	Ser Asp Lys Tyr Leu Met	Arg Ser Ile Lys
210	215	220
Lys Gln Thr Gly Gln Thr	Phe His Tyr Trp Met Ala	Asp Phe Ile Leu
225	230	235
Arg Glu Ala Lys Leu Met	Leu Arg Ser Thr Asp Leu	Ser Val Thr Glu
245	250	255
Ile Ala Asp Lys Leu Ser	Phe Pro Asn Ser Ser Ser	Phe Ala Arg Phe
260	265	270
Phe Arg Lys Tyr Thr Gly	Phe Ser Pro Val Gln Phe	Arg Asn Glu Ala
275	280	285

<210> 8541

<211> 323

<212> PRT

<213> B.fragilis

<400> 8541

Lys Thr Val Ser Leu His	Pro Glu Lys Met Asn Ile	Ile Ile Met Asn Ile
1	5	10
Asn Ser Lys Ala Lys Gly	Phe Val Cys Gly Ala Val	Ala Ala Ala Thr
20	25	30
Tyr Gly Met Asn Pro Leu	Phe Thr Leu Pro Leu Tyr	Lys Glu Gly Met
35	40	45
Ser Val Asp Ser Val Leu	Phe Tyr Arg Tyr Gly Phe	Ala Val Leu Ile
50	55	60
Leu Gly Ile Leu Met Lys	Val Gln Gly Gln Ser Phe	Ala Leu Lys Lys
65	70	75
Asn Glu Val Leu Pro Leu	Ile Val Gly Gly Leu Leu	Phe Ser Ala Ser
85	90	95
Ser Leu Leu Leu Phe Leu	Ser Tyr Lys His Met Asp	Ala Gly Ile Ala
100	105	110
Ser Thr Ile Leu Phe Val	Tyr Pro Val Met Val Ala	Leu Ile Met Phe
115	120	125
Leu Phe Phe His Glu Lys	Val Ser Leu Leu Thr Val	Phe Cys Ile Leu
130	135	140
Leu Ala Leu Ser Gly Ile	Gly Leu Leu Tyr Lys Gly	Glu Gly Gly Glu
145	150	155
Thr Leu Ser Leu Val Gly	Met Leu Leu Val Ile Leu	Ser Ser Leu Ser
165	170	175
Tyr Ala Val Tyr Ile Val	Gly Val Asn His Ser Thr	Leu Lys Leu Met
180	185	190
Ser Thr Ala Lys Leu Thr	Phe Tyr Ala Leu Leu Phe	Gly Leu Ser Ile
195	200	205
Tyr Ile Val Arg Leu Asn	Phe Cys Ser Asp Leu Gln	Ala Val Pro Ser
210	215	220
Leu Pro Ala Trp Gly Asn	Ile Leu Ala Met Ala Phe	Leu Pro Thr Val
225	230	235
Ile Ser Leu Val Cys Thr	Ala Val Ser Ile His Thr	Ile Gly Ser Thr

245 250 255
 Ser Thr Ala Ile Leu Gly Ala Leu Glu Pro Val Thr Ala Leu Phe Phe
 260 265 270
 Gly Val Met Ile Phe Gly Glu Arg Leu Thr Pro Arg Leu Met Leu Gly
 275 280 285
 Ile Leu Met Ile Leu Val Ala Val Thr Phe Ile Val Val Gly Lys Pro
 290 295 300
 Leu Met Thr Phe Leu Lys Glu Glu Val Ala Gly Gly Met Lys Arg Lys
 305 310 315 320
 Leu Thr Arg

<210> 8542

<211> 269

<212> PRT

<213> B.fragilis

<400> 8542

Ser Met Gln Ser Phe Arg Val Ile Lys Pro Thr Ala Ala Leu Val Pro
 1 5 10 15
 Tyr Val Arg His Tyr Trp Val Leu Ser Asp Asp Ala Leu Ala Pro Val
 20 25 30
 Ser Glu Arg Thr Leu Pro Val Gly Cys Val Gln Met Val Phe His Arg
 35 40 45
 Gly Arg Gln Leu Phe Ser Leu Thr Glu Gly Arg Leu Gln Pro Ser Ser
 50 55 60
 Phe Ile Ser Gly Gln Ala Phe Gly Tyr Ser Asp Val Glu Ser Thr Gly
 65 70 75 80
 Met Leu Glu Met Ile Val Val Val Phe Gln Pro Phe Ala Ala Lys Ala
 85 90 95
 Phe Leu His Met Pro Val Ser Glu Phe Arg Gly Met Asn Val Asn Thr
 100 105 110
 Glu Glu Thr Gly Asp Pro Leu Leu Val Asp Leu Gly Arg Arg Ile Ala
 115 120 125
 Asp Met Pro Asp Arg Val Ala Cys Ile Arg Leu Ile Glu Glu Phe Leu
 130 135 140
 Leu Ser Arg Leu Tyr Ala Phe Pro Glu Tyr Asn Leu Lys Arg Val Ser
 145 150 155 160
 Thr Val Trp Glu Ala Val Asn Leu His Pro His Ile Arg Thr Ala Gln
 165 170 175
 Leu Ala Asp Val Ala Cys Leu Ser Asn Lys Gln Phe Gly Arg Val Phe
 180 185 190
 Ala Glu Tyr Val Gly Ala Thr Pro Lys Glu Phe Leu Arg Ile Val Arg
 195 200 205
 Ile Gln Arg Ala Leu Tyr Thr Leu Gln Cys Gln Pro Gly Ile Ser Phe
 210 215 220
 Ala Gln Leu Ala Tyr Glu Cys Gly Phe Phe Asp Gln Ser His Met Ile
 225 230 235 240
 Lys Glu Phe Lys Leu Phe Ser Gly Tyr Thr Pro Ala Glu Tyr Leu Ala
 245 250 255
 Val Cys Ala Pro Tyr Ser Asp Tyr Phe Ser Val Glu Glu
 260 265

<210> 8543

<211> 165

<212> PRT

<213> B.fragilis

<400> 8543

Glu Ile Arg Ser Met Lys Gln Gln Glu Thr Asn Pro Asp Ser Leu Ile
 1 5 10 15
 Glu Asn Tyr Leu Pro Ala Asp Tyr Tyr Asp Ser Phe Ser Lys Glu Leu
 20 25 30
 His Asn Lys Asn Ala Ile Ser Thr Asp Glu Phe Ala Asp Ile Val Phe
 35 40 45
 Asn Gln Leu Pro Ser Trp Ile Ile Arg Leu Leu Lys Val Arg Asn Cys
 50 55 60
 Ile Val Lys Pro Phe Gly Leu Asn Thr Asn Arg Arg Ile Thr Asp Met
 65 70 75 80
 Glu Cys Glu Arg Asn Gln His Glu Ile Ile Phe Gly Met Ser Asp Lys
 85 90 95
 His Leu Thr Phe Tyr Val Ser Leu Trp Cys Lys Val Ser Glu Ala Asn
 100 105 110
 Ser Gln Thr Leu Arg Ile Thr Thr Ile Val Lys Tyr His Asn Arg Leu
 115 120 125
 Gly Lys Leu Tyr Phe Phe Val Val Arg Pro Phe His Lys Val Ile Ile
 130 135 140
 Arg Ser Leu Leu Glu Arg Val Glu Lys Arg Tyr Lys Leu Ile Ser Leu
 145 150 155 160
 Glu Arg Glu Ala Ser
 165

<210> 8544
 <211> 291
 <212> PRT
 <213> B.fragilis

<400> 8544
 Lys Ile Asp Pro Asn Ser Phe Ser Tyr Leu Cys Val Leu Trp Arg His
 1 5 10 15
 Lys Ser Asp Asn Tyr Lys Ala Ala Asn Asp Arg Asn Thr Glu Lys Gln
 20 25 30
 Lys Ser Ala Tyr Arg Met Asn Thr Pro Leu Gln Pro Tyr Arg Ile Gly
 35 40 45
 Asn Ser Thr Leu Leu Ser Asn Arg Lys Thr Thr Ala Phe Leu Cys Ser
 50 55 60
 Arg Gln Val Pro Glu Asn Lys Ile Pro Pro Ile Tyr Asn Trp Ile Asn
 65 70 75 80
 Gln Leu Ser Pro Glu Lys Asp Cys Ile Leu Cys Gly Asn His Ser Arg
 85 90 95
 Met Glu Gln Glu Val Phe Asn Ile Leu Leu Glu Lys Lys Ile Pro Val
 100 105 110
 Ile Leu Ala Leu Ala Glu Gly Met Lys Lys Glu Trp Asp Asn Lys Val
 115 120 125
 Lys Leu Ala Leu Glu Glu Asn Arg Met Leu Ile Val Thr Thr Cys Asp
 130 135 140
 Asp Lys Ile His Arg Ile Asn His Gln Ser Ala Tyr Asp Arg Asn Glu
 145 150 155 160
 Thr Ile Leu Ser Leu Ala Asp Asp Ile Ile Gly Tyr Cys Thr Pro
 165 170 175
 Gly Gly Asn Ile Asp Arg Gln Thr Lys Gly Lys Thr Asn Ile Thr Tyr
 180 185 190
 Leu Gln Lys Ser Asp Tyr Leu Ser Thr Glu Leu Ile Phe Thr Asp Lys
 195 200 205
 Val Ala Asp Ser Asp Val Met Ile Tyr Arg Thr Ser Thr Lys Lys Gly
 210 215 220
 Lys Ile Phe Leu Asp Ile Lys Gln Glu Ser Ser Gly Gln Glu Tyr Leu
 225 230 235 240

Lys Ile Thr Gln Ser Lys Pro Gln Gly Asn Ser Ala Phe His Arg Glu
 245 250 255
 Thr Ile Phe Ile Asp Lys Asn Glu Val Leu Gln Phe Lys Glu Glu Leu
 260 265 270
 Glu Lys Val Ile Asp Tyr Trp Lys Ile Ser Thr Ile Lys Lys Asn Gln
 275 280 285
 Thr Pro Ile
 290

<210> 8545

<211> 430

<212> PRT

<213> B.fragilis

<400> 8545

Arg Gln Val Pro Thr Ile Pro Arg Ile Asp Met Val Tyr Asp Ala Phe
 1 5 10 15
 Lys Ala Tyr Val Ile Gly Gly Lys Ala Pro Asp Thr Ile Ser Glu Val
 20 25 30
 Val Lys Asp Ile Tyr Thr Tyr Ser Gly Tyr Tyr Val Asn Met Val Leu
 35 40 45
 His Lys Glu Pro Asp Lys Leu Cys Gly Ala Phe Lys Arg Ile Ser
 50 55 60
 Gln Leu Arg Val Asp Val Ser Tyr Pro Phe Leu Leu Pro Leu Tyr Asn
 65 70 75 80
 Asp Tyr Val Asn Glu Val Ile Ser Arg Asp Glu Phe Tyr Glu Ala Leu
 85 90 95
 Cys Leu Val Glu Asn Tyr Val Phe Arg Arg Ala Ile Cys Gly Ile Pro
 100 105 110
 Thr Asn Ser Leu Asn Lys Thr Phe Ala Thr Leu Tyr Lys Ser Phe Asp
 115 120 125
 Lys Ala Asn Tyr Met Asp Gly Leu Lys Ala Ala Phe Leu Leu Leu Asp
 130 135 140
 Ser Tyr Lys Arg Phe Pro Asn Asp Thr Glu Phe Thr Thr Phe Leu Gln
 145 150 155 160
 Thr Lys Asp Val Tyr Asn Phe Arg Asn Arg Asn Tyr Leu Leu Asn Arg
 165 170 175
 Leu Glu Asn Phe Gln Arg Lys Glu Met Val Asn Ile Ser Asp Tyr Thr
 180 185 190
 Ile Glu His Val Met Pro Gln Asn Pro Asn Leu Ser His Glu Trp Gln
 195 200 205
 Glu Met Leu Gly Glu Gly Trp Val Glu Val Gln Gly Lys Tyr Leu His
 210 215 220
 Thr Leu Gly Asn Leu Thr Leu Thr Gly Tyr Asn Ser Glu Leu Ser Asp
 225 230 235 240
 Arg Pro Phe Gln Glu Lys Lys Ser Met Glu Gly Gly Phe Asp Asp Ser
 245 250 255
 Pro Ile Arg Leu Asn Ser Tyr Leu Arg Arg Ile Ser Ser Trp Asn Glu
 260 265 270
 Glu Gln Ile Leu Val Arg Ala Gly Gln Leu Ala Glu Lys Ala Lys Glu
 275 280 285
 Ile Trp Arg Phe Pro Leu Leu Ser Pro Glu Thr Leu Glu Val Tyr Arg
 290 295 300
 Ser Ala Glu Arg Asp Pro Ala Glu Tyr Thr Leu Glu His Tyr Glu Tyr
 305 310 315 320
 Leu Lys Gly Asp Ile Leu Thr Leu Phe Gln Ala Leu Arg Arg Arg Ile
 325 330 335
 Met Asn Ile Asp Pro Ser Val Lys Glu Glu Leu Lys Lys Leu Tyr Ile
 340 345 350

Ala Phe Lys Ala Tyr Thr Asn Phe Val Asp Val Val Pro Gln Lys Ser
 355 360 365
 Arg Leu Arg Leu Ser Leu Asn Val Ala Phe Ala Asp Ile Leu Asp Pro
 370 375 380
 Lys Gly Leu Cys Lys Asp Val Ser Asn Leu Gly Arg Trp Gly Asn Gly
 385 390 395 400
 Asp Val Glu Val Gly Ile Ser Asn Met Asn Glu Leu Asp Asp Ile Met
 405 410 415
 Glu Leu Ile Gln Gln Ala Phe Asp Lys Gln Met Glu Ala Asn
 420 425 430

<210> 8546
 <211> 283
 <212> PRT
 <213> B.fragilis

<400> 8546
 Ile Leu Ser Pro Met Ile Glu Ala Pro Glu Ala Arg Leu Leu Cys Glu
 1 5 10 15
 Gln Leu Asn Lys Thr Val Cys Gly Lys Arg Ile Thr Asp Val Phe Ala
 20 25 30
 Gln Tyr Thr Pro His Lys Phe Ala Trp Phe Tyr Gly Lys Pro Glu Glu
 35 40 45
 Cys Ala Glu Arg Leu Val Gly Lys Thr Ile Asp Arg Ala Cys Pro Gln
 50 55 60
 Gly Gly Met Val Glu Leu Thr Ala Gly Asp Thr Met Leu Val Leu Thr
 65 70 75 80
 Asp Gly Val Asn Leu Arg Tyr Phe Glu Pro Gly Ala Lys Leu Pro Ser
 85 90 95
 Lys His Gln Leu Leu Val Ala Phe Asp Asp Glu Ser Cys Leu Leu Ala
 100 105 110
 Ser Val Arg Met Tyr Gly Ala Leu Leu Cys Phe Thr Gln Gly His Phe
 115 120 125
 Asp Ala Pro Leu Ala Ala Tyr Tyr Glu Thr Ala Arg Thr Lys Pro Gln
 130 135 140
 Val Met Thr Asp Ala Phe Asp Lys Glu Tyr Phe Leu Gly Leu Val Asn
 145 150 155 160
 Ala Pro Glu Ala Gln Lys Lys Pro Ala Lys Ala Phe Leu Ala Thr Glu
 165 170 175
 Gln Thr Ile Pro Gly Leu Gly Asn Gly Val Leu Gln Asp Ile Leu Tyr
 180 185 190
 His Ala His Ile His Pro Lys Thr Lys Ile Asp Lys Leu Gly Ala Lys
 195 200 205
 Glu Lys Glu Lys Met Tyr Glu Gln Val Lys Glu Thr Leu Gln Asp Ile
 210 215 220
 Tyr His Leu Gly Gly Arg Ser Thr Glu Thr Asp Leu Phe Gly Val Pro
 225 230 235 240
 Gly Gln Tyr Val Ala Ser Leu Ser Lys Asp Thr Ala Gly His Val Cys
 245 250 255
 Pro Lys Cys Gly Glu Thr Ile Val Lys Glu Asn Tyr Leu Gly Gly Ser
 260 265 270
 Ile Tyr Tyr Cys Arg Gly Cys Gln Val Met Lys
 275 280

<210> 8547
 <211> 338
 <212> PRT
 <213> B.fragilis

<400> 8547

Ile Ser Ser Pro Arg Val Lys Thr Phe Ser Trp Glu Leu Asp Leu Trp
 1 5 10 15
 Gly Asn Leu Arg Trp Ala Arg Ser Ala Ser Ile Ala Glu Tyr Leu Gln
 20 25 30
 Ser Val Glu Ala Gln Arg Ala Leu Arg Met Thr Ile Ile Ala Glu Val
 35 40 45
 Ala Gln Ala Tyr Tyr Glu Leu Val Ala Leu Asp Thr Glu Leu Asp Ile
 50 55 60
 Val Arg Gln Thr Leu Lys Ala Arg Glu Glu Gly Met Arg Leu Ala Arg
 65 70 75 80
 Ile Arg Phe Glu Gly Gly Leu Thr Ser Glu Thr Ser Tyr Arg Gln Ser
 85 90 95
 Gln Val Glu Leu Ala Arg Thr Ala Thr Leu Val Pro Asp Leu Glu Arg
 100 105 110
 Lys Ile Ser Leu Lys Glu Asn Asp Ile Ala Phe Leu Ala Gly Glu Tyr
 115 120 125
 Pro Asn Lys Ile Thr Arg Ser Arg Leu Leu Gln Glu Phe Asn Phe Pro
 130 135 140
 Gln Glu Leu Pro Val Gly Leu Pro Ser Gly Leu Leu Glu Arg Arg Pro
 145 150 155 160
 Asp Ile Arg Gln Ala Glu Gln Lys Leu Ile Ala Ala Asn Ala Arg Val
 165 170 175
 Gly Val Ala Tyr Thr Asn Met Phe Pro Arg Ile Ser Leu Thr Gly Arg
 180 185 190
 Val Gly Ser Glu Ser Thr Ala Leu Ser Glu Leu Leu Lys Ser Pro Tyr
 195 200 205
 Ser Ile Met Glu Gly Ala Leu Leu Thr Pro Ile Phe Gly Trp Gly Lys
 210 215 220
 Asn Arg Ala Ala Leu Lys Ala Lys Lys Ala Ala Tyr Glu Ala Glu Val
 225 230 235 240
 His Ser Tyr Glu Lys Ala Val Leu Thr Ala Phe Lys Glu Thr Arg Asn
 245 250 255
 Ser Ile Val Asn Phe Asn Lys Ile Lys Glu Val Tyr Asp Leu Arg Ala
 260 265 270
 Lys Leu Glu Arg Ser Ala Lys Ser Tyr Val Asp Leu Ala Gln Leu Gln
 275 280 285
 Tyr Ile Asn Gly Val Thr Asn Tyr Leu Asp Val Leu Asp Ala Gln Arg
 290 295 300
 Gly Tyr Phe Asp Ala Gln Ile Gly Leu Ser Asn Ala Ile Arg Asp Glu
 305 310 315 320
 Leu Ile Ala Val Val Gln Val Tyr Lys Ala Leu Gly Gly Gly Trp Gln
 325 330 335
 Val Gln

<210> 8548

<211> 560

<212> PRT

<213> B.fragilis

<400> 8548

Val Arg Ile Thr Asn Thr Phe Lys Tyr Lys Ile Lys Lys Met Thr Lys
 1 5 10 15
 Ser Ala Leu Gln Ile Ala Arg Ala Ala Tyr Gln Pro Lys Leu Pro Lys
 20 25 30
 Ala Leu Lys Gly Ser Val Lys Ala Val Glu Gly Ala Ala Thr Gln Ser
 35 40 45
 Val Ala Asp Gln Glu Ala Ile Gln Lys Leu Phe Pro Asn Thr Tyr Gly

50	55	60
Met Pro Leu Ile Lys Phe Glu Glu Gly Glu Ala Ile Gln Leu Pro Ala		
65	70	75
Met Asn Val Gly Val Ile Leu Ser Gly Gly Gln Ala Pro Gly Gly His		80
	85	90
Asn Val Ile Ser Gly Leu Phe Asp Gly Ile Lys Thr Leu Asn Lys Asp		95
	100	105
Asn Lys Leu Tyr Gly Phe Ile Leu Gly Pro Gly Gly Leu Val Asp His		110
	115	120
Asn Tyr Met Glu Leu Thr Ala Asp Ile Ile Asp Glu Tyr Arg Asn Thr		125
	130	135
Gly Gly Phe Asp Ile Ile Gly Ser Gly Arg Thr Lys Leu Glu Thr Pro		140
145	150	155
Glu Gln Phe Glu Lys Gly Leu Glu Ile Ile Asn Lys Leu Gly Ile Lys		160
	165	170
Ala Leu Val Ile Ile Gly Gly Asp Asp Ser Asn Thr Asn Ala Cys Val		175
	180	185
Leu Ala Glu Tyr Tyr Ala Ala Lys Asn Ala Gly Val Gln Val Ile Gly		190
	195	200
Cys Pro Lys Thr Ile Asp Gly Asp Leu Lys Asn Glu Met Ile Glu Thr		205
210	215	220
Ser Phe Gly Phe Asp Thr Ala Cys Lys Val Tyr Ser Glu Val Ile Gly		225
225	230	235
Asn Ile Gln Arg Asp Cys Asn Ser Ala Arg Lys Tyr Trp His Phe Ile		240
	245	250
Lys Leu Met Gly Arg Ser Ala Ser His Ile Ala Leu Glu Cys Ala Leu		255
	260	265
Gln Val Gln Pro Asn Val Cys Ile Ile Ser Glu Glu Val Glu Ala Lys		270
	275	280
Asp Met Ser Leu Asp Asp Val Val Thr Tyr Ile Ala Lys Ile Val Ala		285
290	295	300
Asp Arg Ala Ala Gln Gly Asn Asn Phe Gly Thr Val Leu Ile Pro Glu		305
305	310	315
Gly Leu Val Glu Phe Ile Pro Ala Met Lys Arg Leu Ile Ala Glu Leu		320
	325	330
Asn Asp Phe Leu Ala Ala Asn Ala Val Glu Phe Ala Asn Ile Lys Arg		335
	340	345
Ser Arg Gln Arg Glu Tyr Ile Ile Ser Lys Leu Ser Lys Glu Asn Ala		350
	355	360
Glu Ile Tyr Ala Ser Leu Pro Glu Gly Val Ala Arg Gln Leu Ser Leu		365
370	375	380
Asp Arg Asp Pro His Gly Asn Val Gln Val Ser Leu Ile Glu Thr Glu		385
385	390	395
Lys Leu Leu Ser Glu Met Val Gly Thr Lys Leu Ala Gln Trp Lys Glu		400
	405	410
Glu Gly Lys Tyr Val Gly Lys Phe Ala Ala Gln His His Phe Phe Gly		415
	420	425
Tyr Glu Gly Arg Cys Ala Ala Pro Ser Asn Tyr Asp Ala Asp Tyr Cys		430
	435	440
Tyr Ser Leu Gly Tyr Thr Ala Ser Met Leu Ile Ala Asn Gly Lys Thr		445
450	455	460
Gly Tyr Met Ser Ser Val Arg Asn Thr Thr Ala Pro Ala Ala Glu Trp		465
465	470	475
Ile Ala Gly Gly Val Pro Ile Thr Met Met Met Asn Met Glu Arg Arg		480
	485	490
His Gly Glu Met Lys Pro Val Ile Gln Lys Ala Leu Val Lys Leu Asp		495
	500	505
Gly Lys Pro Phe Leu Thr Phe Ala Ala Lys Arg Asp Gln Trp Ala Leu		510
	515	520
		525

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Asn Thr Asp Tyr Val Tyr Pro Gly Pro Ile Gln Tyr Phe Gly Pro Thr
 530 535 540
 Glu Val Cys Asp Gln Pro Thr Lys Thr Leu Gln Leu Glu Gln Ala Lys
 545 550 555 560

<210> 8549
 <211> 968
 <212> PRT
 <213> B.fragilis

<400> 8549

Lys Gly Asn Thr Ser Glu Val Phe Tyr Glu Asn Lys Ile Cys Ile Ser
 1 5 10 15
 Phe Val Leu Phe Ile Leu Cys Leu Ile Tyr Pro Asn Asn Met Lys Lys
 20 25 30
 His Leu Ile Leu Met Ile Ser Ala Ala Ile Ile Pro Leu Leu Leu Tyr
 35 40 45
 Ala Cys Ser Ala Glu Glu Glu Arg Ala Leu Thr Ser Thr Thr Leu Glu
 50 55 60
 Val Ala Gln Ser Ala Ile Asp Phe Lys Ser Asp Ala Gly Thr Arg Asp
 65 70 75 80
 Ile Ala Ile Val Thr Asn Ala Asp His Trp Thr Ala Arg Ser Asp Lys
 85 90 95
 Asp Trp Cys Ser Val Ala Val Asn Glu Ser Thr Leu Thr Val Asn Val
 100 105 110
 Ser Gly Tyr Asp Gly Lys Glu Thr Arg Glu Ala Val Ile Lys Val Thr
 115 120 125
 Ala Asp Gly Leu Ala Glu Thr Val Asn Val Arg Gln Leu Gly Ser Glu
 130 135 140
 Pro Ala Ile Leu Ile Ser Gln Gln Ile Phe Thr Val Glu Ala Ser Gly
 145 150 155 160
 Ser Asp Ile Ala Phe Asp Val Thr Thr Asn Val Ser Val Thr Ile Thr
 165 170 175
 Leu Pro Glu Trp Ile Lys Glu Lys Pro Ala Gly Thr Arg Ala Ser Glu
 180 185 190
 Met Val Thr Thr Thr His Asn Tyr Ile Val Thr Ala Asn Pro Glu Asp
 195 200 205
 Ser Glu Arg Thr Gly Asn Ile Thr Val Lys Glu Val Gly Gly Glu Leu
 210 215 220
 Glu Ala Leu Val Ser Val Thr Gln Lys Gly Leu Gly Glu Tyr Glu Ser
 225 230 235 240
 Gly Asn Leu Glu Gly Ile Lys Asp Asp Ile Lys Val Pro Val Glu Ser
 245 250 255
 Gly Glu Ala Ser Ser Phe Gln Gly Gly Ser Asn Ile Asp Lys Ser Phe
 260 265 270
 Asp Gly Asp Met Ser Thr Ile Tyr His Ser Asn Trp Asn Asn Ala Gly
 275 280 285
 Asp His Tyr Phe Pro Ile Thr Leu Thr Tyr Asn Phe Ala Ala Gly Ser
 290 295 300
 Asp Met Asp Tyr Leu Ile Tyr Tyr Pro Arg Thr Ser Gly Pro Asn Gly
 305 310 315 320
 Asn Phe Lys Glu Val Glu Ile Arg Val Lys Ser Asn Ala Asn Thr Arg
 325 330 335
 Gly Thr Asp Glu Trp Asn Thr Val Met Thr Lys Asn Phe Gly Gly Thr
 340 345 350
 Asn Ala Ala Val Arg Val Asn Phe Pro Lys Ala Gln Ile Gly Val Thr
 355 360 365
 Ser Val Gln Phe Ile Val Lys Ser Gly Ser Gly Asp Gly Gln Gly Phe
 370 375 380

Ala	Ala	Cys	Ala	Glu	Met	Glu	Phe	Tyr	Lys	Lys	Asn	Pro	Asp	Ala	Phe
385					390					395					400
Asp	Pro	Leu	Thr	Leu	Phe	Thr	Asp	Gly	Thr	Cys	Ser	Glu	Leu	Lys	Pro
				405					410						415
Gly	Leu	Thr	Asp	Glu	Glu	Ile	Glu	Asn	Cys	Pro	Tyr	Ser	Phe	Tyr	Lys
			420					425						430	
Asn	Ile	Ala	Tyr	Tyr	Met	Lys	Gln	Gly	Lys	Tyr	Pro	Ala	Glu	Phe	Arg
		435					440					445			
Ile	Gln	Glu	Tyr	Lys	Ala	Trp	Pro	His	Pro	Asp	Ala	Gln	Ser	Glu	Thr
	450					455					460				
His	Lys	Thr	Ser	Pro	Tyr	Ser	Leu	Arg	Asp	Asn	Pro	Thr	Gly	Ile	Ser
465					470					475					480
Val	Lys	Asp	Gly	Glu	Gln	Leu	Met	Ile	Phe	Val	Gly	Asp	Thr	His	Gly
				485					490						495
Gln	Thr	Val	Ser	Ala	Val	Ile	Gln	Asn	Leu	Asp	Val	Pro	Gly	Gly	Asp
			500					505					510		
Gly	Phe	Gly	Gly	Thr	Ser	Tyr	Pro	Leu	Ser	Glu	Gly	Ala	Asn	Lys	Ile
	515						520					525			
Thr	Ala	Arg	Asn	Lys	Gly	Leu	Met	Tyr	Ile	Leu	Tyr	His	Thr	Pro	Asp
	530					535						540			
Tyr	Glu	Thr	Ala	Gln	Pro	Val	Lys	Ile	His	Ile	Ala	Ser	Gly	Gln	Val
545					550					555					560
Asn	Gly	Tyr	Phe	Asp	Val	Ala	Lys	His	Gln	Ala	Ser	Asp	Trp	Asn	Lys
				565					570					575	
Leu	Leu	Ser	Asn	Ala	Val	Asp	Lys	Tyr	Phe	Asp	Val	Val	Gly	His	Tyr
			580					585					590		
Ala	His	Leu	Thr	Phe	Pro	Thr	Glu	Arg	Phe	Arg	Thr	His	Thr	Pro	Asp
			595				600					605			
Gly	Lys	Ala	Leu	Ile	Asp	Ala	Tyr	Asp	Gln	Ile	Val	Asn	Ser	Glu	Met
	610					615					620				
Glu	Leu	Met	Gly	Leu	Tyr	Lys	Tyr	Asn	Lys	Leu	Phe	Lys	Asn	Arg	Met
625					630					635					640
Tyr	Leu	His	Val	Met	Tyr	Thr	Ser	Tyr	Met	Tyr	Ala	Thr	Ser	Tyr	His
				645					650					655	
Thr	Ala	Tyr	Asn	Asp	Gly	Thr	Leu	Ala	Glu	Leu	Cys	Asn	Val	Asp	Lys
			660					665					670		
Leu	Lys	Thr	Ser	Ala	Cys	Trp	Gly	Pro	Ala	His	Glu	Ile	Gly	His	Cys
		675					680					685			
Asn	Gln	Thr	Arg	Pro	Gly	Leu	Lys	Trp	Leu	Gly	Thr	Thr	Glu	Val	Thr
	690					695					700				
Asn	Asn	Ile	Met	Ser	Glu	Tyr	Ile	Gln	Thr	Thr	Ile	Phe	Gly	Gln	Pro
705					710					715					720
Ser	Arg	Leu	Gln	Thr	Glu	Asp	Met	Gly	Asp	Gly	Ser	Arg	Asn	Arg	Tyr
				725					730					735	
Ser	Lys	Ala	Trp	Thr	Gln	Ile	Ile	Ala	Ala	Gly	Ala	Pro	His	Gly	Asn
			740					745					750		
Phe	Gly	Ser	Asp	Ser	Asp	Val	Phe	Cys	Lys	Leu	Val	Pro	Phe	Trp	Gln
		755					760					765			
Leu	Glu	Leu	Tyr	Phe	Gly	Lys	Val	Leu	Gly	Arg	Thr	Pro	Leu	Gln	Gln
	770					775					780				
Ser	Asp	Lys	Gly	Gly	Phe	Tyr	Pro	Asp	Val	Tyr	Glu	Tyr	Ile	Arg	Thr
785					790					795					800
His	Asp	Asn	Leu	Arg	Thr	Ala	Gly	Glu	Gln	Gln	Thr	Glu	Phe	Val	Tyr
				805					810					815	
Ile	Cys	Ser	Leu	Ile	Ala	Lys	Ala	Asn	Leu	Leu	Asp	Phe	Phe	Thr	Lys
			820					825					830		
Trp	Gly	Phe	Leu	Thr	Pro	Val	Asp	Ile	Thr	Val	Asp	Asp	Tyr	Gly	Thr
		835					840					845			
Gly	Lys	Leu	Thr	Val	Thr	Gln	Ala	Arg	Ile	Asp	Glu	Ile	Arg	Ser	Arg

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850	855	860
Val Glu Ala Leu Gly Tyr Pro Lys Pro Asp Val Ala Leu Glu Tyr Ile		
865	870	875
Thr Asp Asn Ser Val Glu Leu Tyr Lys Asp Lys Pro Gly Ile Val Ala		880
	885	890
Gly Thr Ala Thr Arg Ser Gly Ser Thr Phe Thr Met Thr Asn Trp Lys		895
	900	905
Asn Val Ala Ala Tyr Glu Val Val Asp Glu Thr Gly Lys Lys Val Cys		910
	915	920
Ile Ser Asp Gly Leu Leu Ala Pro Ser Gly Thr Ala Thr Phe Thr Met		925
	930	935
Lys Thr Ala Trp Lys Asp Gly Phe Lys Val Tyr Ala Val Ser Ala Thr		940
945	950	955
Gly Ala Arg Thr Ala Val Thr Phe		960
	965	

<210> 8550

<211> 176

<212> PRT

<213> B.fragilis

<400> 8550

Thr Ile Lys Thr Ile Tyr Ser Glu Leu Thr Leu Leu Thr Gly Lys Gln		
1	5	10
Tyr Thr Ile Met Asn Leu Leu Ile Ile Ser Asn Ala Asp Ser Cys Arg		15
	20	25
Ser Arg Ile Ala Gln Ala Leu Leu Ser Ser Phe Gly Lys Gly Met Lys		30
	35	40
Val Tyr Ser Ala Gly Thr Met Pro Ala Ala Glu Ile His Pro Leu Val		45
	50	55
Leu Lys Leu Ile Lys Glu Thr Gly Ile Glu Pro Asn Thr Gln Pro Pro		60
65	70	75
His Ser Ile Arg Glu Tyr Thr Asn Glu Asn Trp Asp His Ile Ile Val		80
	85	90
Leu Ser Gly Thr Ala Asp Asp Ile Arg Asn Leu Phe Arg Lys Glu Val		95
	100	105
Lys His Trp Tyr His Leu Pro Phe Glu Asp Leu Phe Ser Thr Ala Ala		110
	115	120
Pro Ser Glu Ala Glu Leu Trp Asp Arg Leu Ile Arg Leu Lys Glu Asp		125
	130	135
Ile Gln Arg Lys Met Tyr Glu Leu Tyr Arg Asp Asp Leu Arg Glu Gln		140
145	150	155
Leu Leu Pro Arg Cys Ser Cys Gly Ala Asn Asp Phe Cys Arg Cys Glu		160
	165	170
		175

<210> 8551

<211> 62

<212> PRT

<213> B.fragilis

<400> 8551

Lys Arg Leu Thr Asp Ser Ala Glu Gln Ala Lys Arg Val Arg Ser Ala		
1	5	10
Met Glu Leu Gln Lys Gln Gly Cys Lys Leu Arg Ala Leu Arg Leu Leu		15
	20	25
Cys Gly Ile Pro Val Glu Asn Lys Ile Ile Ile Phe Phe His Asn Ser		30
	35	40
Glu Lys Asn Thr Lys Phe Ala Thr Leu Leu Ser Ser Asn Tyr		45
	50	55
		60

<210> 8552
 <211> 395
 <212> PRT
 <213> B.fragilis

<400> 8552

Pro	Phe	Tyr	Leu	Ser	Glu	Ser	Ile	Asp	Ser	Leu	Thr	Asn	Ala	Phe	Phe
1				5					10					15	
Glu	Thr	Met	Ser	Gly	Phe	Thr	Thr	Thr	Gly	Ala	Thr	Ile	Leu	Asp	Asp
			20					25					30		
Ile	Glu	Ser	Leu	Ser	His	Gly	Met	Leu	Phe	Trp	Arg	Ser	Leu	Thr	Gln
		35					40					45			
Trp	Ile	Gly	Gly	Leu	Gly	Ile	Val	Phe	Phe	Thr	Ile	Ala	Val	Leu	Pro
	50					55					60				
Val	Phe	Thr	Ser	Gly	Gly	Val	Gln	Leu	Phe	Ser	Ala	Glu	Ser	Thr	Gly
65					70					75					80
Val	Thr	His	Asp	Arg	Thr	His	Pro	Lys	Ile	Asn	Val	Met	Ala	Lys	Trp
			85						90					95	
Leu	Trp	Thr	Val	Tyr	Leu	Ile	Leu	Thr	Leu	Ala	Glu	Thr	Ile	Leu	Leu
			100					105					110		
Met	Leu	Gly	Gly	Met	Ser	Leu	Phe	Asp	Ala	Val	Cys	Gln	Ser	Phe	Ala
		115					120					125			
Thr	Thr	Ala	Thr	Gly	Gly	Tyr	Ser	Thr	Lys	Gln	Ala	Ser	Ile	Ser	Tyr
	130					135					140				
Trp	Asn	Ser	Pro	Phe	Ile	Glu	Tyr	Val	Val	Ala	Ile	Phe	Met	Leu	Leu
145					150					155					160
Ser	Gly	Val	Asn	Phe	Ala	Leu	Phe	Leu	Met	Cys	Leu	Arg	Gly	Lys	Val
			165						170					175	
Ser	Arg	Leu	Leu	Arg	Asp	Glu	Glu	Leu	Arg	Trp	Phe	Leu	Gly	Ser	Val
			180					185					190		
Ala	Ile	Leu	Thr	Phe	Leu	Ile	Thr	Phe	Ala	Leu	Val	Phe	Gln	Asn	His
		195					200					205			
Tyr	Asp	Trp	Glu	Thr	Ala	Phe	Arg	Lys	Ser	Leu	Phe	Gln	Val	Ala	Thr
	210					215					220				
Ala	His	Thr	Ser	Cys	Gly	Phe	Ala	Thr	Asp	Asp	Tyr	Asn	Leu	Trp	Pro
225					230					235					240
Ala	Phe	Thr	Trp	Leu	Leu	Leu	Ile	Ala	Met	Leu	Ser	Gly	Gly	Cys	
			245					250					255		
Thr	Gly	Ser	Thr	Ser	Gly	Gly	Ile	Lys	Asn	Met	Arg	Leu	Leu	Ile	Ile
			260					265					270		
Ala	Arg	Ser	Ile	Arg	Asn	Glu	Phe	Lys	His	Leu	Leu	His	Pro	Asn	Ala
		275					280					285			
Val	Leu	Pro	Val	Arg	Val	Asn	Lys	Gln	Ser	Val	Ser	Pro	Ser	Ile	Val
	290					295					300				
Ser	Thr	Val	Gly	Met	Phe	Phe	Ala	Phe	Tyr	Leu	Ile	Ile	Val	Ile	Leu
305					310					315					320
Gly	Trp	Ala	Val	Leu	Leu	Phe	Leu	Gly	Val	Gly	Phe	Ser	Glu	Ser	Ile
			325						330					335	
Gly	Thr	Val	Ile	Ser	Ser	Ile	Gly	Asn	Val	Gly	Pro	Gly	Leu	Gly	Ser
		340						345					350		
Cys	Gly	Pro	Ala	Tyr	Ser	Trp	Asn	Gly	Leu	Pro	Asp	Ala	Ala	Lys	Trp
		355					360					365			
Val	Leu	Ser	Phe	Leu	Met	Leu	Ile	Gly	Arg	Leu	Glu	Leu	Phe	Ser	Val
	370					375					380				
Leu	Leu	Leu	Phe	Tyr	Pro	Gly	Phe	Trp	Lys	Ser					
385					390					395					

<210> 8553

<211> 250
 <212> PRT
 <213> B.fragilis

<400> 8553

Leu Leu Tyr Phe Leu Cys Asp Ile Ala Leu Val Pro Leu Glu Leu Trp
 1 5 10 15
 Tyr Ile Ala Ala Ser Val Ala Leu Val Ile Val Gly Gly Leu Trp
 20 25 30
 Met His Leu Asn Glu Gly Ser Thr Pro Met Asp Lys Tyr Ile Glu Ile
 35 40 45
 Thr Ala Gln Lys Ser Arg Met Tyr Leu Leu Pro Asp Ser Ser Lys Val
 50 55 60
 Trp Met Gln Pro Gly Ser Ser Ile Arg Phe Ala Glu Asp Phe Lys Lys
 65 70 75 80
 His Arg Asn Val Trp Leu Lys Gly Asn Ser Leu Phe Glu Val His Lys
 85 90 95
 Asn Met Gly Arg Lys Phe Arg Val Tyr Ile Asp Lys Ala Phe Ile Glu
 100 105 110
 Val Lys Gly Thr Cys Phe Leu Ile Lys Gln Asn Asn Pro Ser Ala Asn
 115 120 125
 Glu Ile Thr Leu Phe Asn Gly Ser Ile Glu Phe Asn Val Glu Ser Thr
 130 135 140
 Gln His Lys Ile Glu Met Lys Pro Leu Gln Glu Leu Val Tyr Asn Pro
 145 150 155 160
 Ala Asp Ala Gly Thr Gln Leu Arg Gln Ile Glu Asn Ile Glu Trp Gln
 165 170 175
 Asn Gly Arg Tyr Asn Phe Thr Gln Phe Asn Leu Glu His Leu Thr Arg
 180 185 190
 Ile Ile Asn Gln Met Tyr Gly Ser Arg Ile Ile Ile Ser Asp Lys Val
 195 200 205
 Asn Lys Asn Cys Ala Phe Thr Gly Ser Ile Arg Tyr Asp Glu Ser Leu
 210 215 220
 Glu Asp Val Ile Asp Lys Ile Cys Phe Ser Leu Asn Leu Arg Lys Lys
 225 230 235 240
 Glu Ile Asn His Glu Ile Ile Ile Tyr Asn
 245 250

<210> 8554
 <211> 316
 <212> PRT
 <213> B.fragilis

<400> 8554

Ser Met Lys Ala Ser Ser Asn Asn Leu Leu Ser Ile Ile Lys Gly Pro
 1 5 10 15
 Arg Gln Phe Val Ile Pro Ile Tyr Gln Arg Thr Tyr Ser Trp Gln Leu
 20 25 30
 Val Gln Cys Asn Gln Leu Leu Asn Asp Ile Leu Arg Ile Ser Asn Asp
 35 40 45
 Ser Ala Val Gln Gly His Phe Ile Gly Ser Ile Val Tyr Phe Gln Glu
 50 55 60
 Ser Ile His Thr Val Ser Asp Val Pro Lys Leu Val Ile Asp Gly
 65 70 75 80
 Gln Gln Arg Leu Thr Val Ser Leu Leu Ile Ala Ala Ile Ala Asp
 85 90 95
 Phe Ile Lys Glu Asn Ala Val Glu Ile Asp Thr Ser Phe Thr Lys Leu
 100 105 110
 Gln Asn Tyr Tyr Leu Ile Asn Pro Glu Glu Asp Asn Glu Leu Arg Tyr

	115		120		125										
Lys	Leu	Leu	Leu	Thr	Arg	Arg	Asp	Lys	Asp	Thr	Tyr	Ile	Asn	Leu	Leu
	130					135					140				
Lys	Gly	Ile	Pro	Arg	Ser	Glu	Gly	Met	Ser	Gln	Arg	Ile	Ile	Glu	Asn
145					150					155					160
Tyr	Asp	Phe	Phe	Lys	Ser	Lys	Ile	Asn	Lys	Glu	Asn	Val	Val	Ala	Ile
				165					170						175
Tyr	Ser	Gly	Val	Gln	Arg	Leu	Phe	Val	Val	Asp	Val	Ala	Leu	Glu	Lys
			180					185					190		
Glu	Lys	Asp	Asn	Pro	Gln	Leu	Ile	Phe	Glu	Ser	Met	Asn	Ser	Thr	Gly
		195					200					205			
Leu	Asp	Leu	Ser	Gln	Ala	Asp	Leu	Ile	Arg	Asn	Tyr	Val	Leu	Met	Gly
	210					215					220				
Gln	Glu	Val	His	Leu	Gln	Thr	Ser	Leu	Tyr	Glu	Ser	Tyr	Trp	Tyr	Pro
225					230					235					240
Met	Glu	Gln	Gly	Tyr	Gly	Ser	Glu	Tyr	Ala	Ala	Leu	Phe	Asn	Ser	Phe
				245					250					255	
Met	Arg	Asp	Tyr	Leu	Ser	Val	Lys	Thr	Gly	Thr	Tyr	His	Ser	Ser	Tyr
		260						265					270		
Arg	Tyr	Gly	Val	Arg	Cys	Phe	Gln	Gly	Leu	Cys	Asp	Arg	Gly	Lys	Ser
	275						280					285			
Ser	Arg	Tyr	Tyr	Gln	Arg	Ser	Ser	Gln	Arg	His	Leu	Tyr	Leu	Phe	Arg
	290					295					300				
Ile	Leu	Arg	Gln	His	Gly	Ser	Ser	Gln	Arg	Ala	Gly				
305					310					315					

<210> 8555

<211> 431

<212> PRT

<213> B.fragilis

<400> 8555

Tyr	Asp	Met	Ala	Lys	Ile	Gln	Ile	Lys	Ser	Glu	Lys	Leu	Thr	Pro	Phe
1				5				10						15	
Gly	Gly	Ile	Phe	Ser	Ile	Met	Glu	Lys	Phe	Asp	Ser	Met	Leu	Ser	Pro
		20						25					30		
Val	Ile	Asp	Ser	Thr	Leu	Gly	Gln	Arg	Cys	Ser	Ser	Ile	Phe	Gly	Tyr
		35					40					45			
Gln	Phe	Ser	Glu	Ile	Val	Arg	Ser	Leu	Met	Ser	Val	Tyr	Phe	Cys	Gly
	50					55					60				
Gly	Ser	Cys	Val	Glu	Asp	Val	Thr	Ser	Gln	Leu	Met	Arg	His	Leu	Ser
65					70					75				80	
Tyr	His	Pro	Thr	Leu	Arg	Thr	Cys	Ser	Ser	Asp	Thr	Ile	Leu	Arg	Ala
				85					90					95	
Ile	Lys	Glu	Leu	Thr	Gln	Glu	Asn	Ile	Ser	Tyr	Thr	Ser	Asp	Gln	Gly
			100				105						110		
Lys	Thr	Tyr	Asp	Phe	Asn	Thr	Ala	Asp	Lys	Leu	Asn	Thr	Leu	Leu	Ile
	115						120					125			
Asn	Ala	Leu	Val	Ser	Thr	Gly	Glu	Leu	Lys	Glu	Ile	Glu	Glu	Tyr	Asp
	130					135					140				
Val	Asp	Phe	Asp	His	Gln	Phe	Leu	Glu	Thr	Glu	Lys	Tyr	Asp	Ala	Lys
145					150					155					160
Pro	Thr	Tyr	Lys	Lys	Phe	Leu	Gly	Tyr	Arg	Pro	Gly	Val	Tyr	Val	Ile
				165					170					175	
Gly	Asp	Lys	Ile	Val	Tyr	Ile	Glu	Asn	Ser	Asp	Gly	Asn	Thr	Asn	Val
			180					185					190		
Arg	Phe	His	Gln	Ala	Asp	Thr	His	Lys	Arg	Phe	Phe	Ala	Leu	Leu	Glu
		195					200					205			
Ser	Gln	Asn	Ile	Arg	Val	Asn	Arg	Phe	Arg	Ala	Asp	Cys	Gly	Ser	Cys

210	215	220
Ser Lys Glu Ile Val	Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr	
225	230	235
Ile Arg Ala Asn Arg	Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu	240
	245	250
Arg Gly Trp Lys Thr	Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn	255
	260	265
Ser Ile Leu Val Glu	Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile	270
	275	280
Gln Arg Gln Arg Arg	Asn Ser Glu Gly Asp Leu Asp Leu Trp Glu Gly Glu	285
	290	295
Tyr Thr Tyr Arg Cys	Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg	300
	305	310
Asp Ile Val Glu Phe	Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe	315
	325	330
Asp Asp Met Asn Asn	Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe	335
	340	345
Met Ala Glu Asn Thr	Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn	350
	355	360
Phe Tyr Lys Thr Ile	Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu	365
	370	375
Lys Lys Thr Ser Arg	Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val	380
	385	390
Pro Ala Lys Trp Ile	Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr	395
	405	410
Thr Glu Asn Arg Ala	Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly	415
	420	425
		430

<210> 8556
 <211> 134
 <212> PRT
 <213> B.fragilis

<400> 8556
Leu Pro Ala Tyr Ser Ile His Leu Ile Asn Ile Lys Asn Met Glu Lys
1 5 10 15
Phe Ile Ala Phe Phe Glu Ile Pro Ala Ala Asp Phe His Arg Ala Val
20 25 30
Gly Phe Tyr Glu Thr Val Leu Asp Ile Lys Leu Ala Val Ser Glu Tyr
35 40 45
Glu Glu Glu Lys Met Ala Cys Phe Met Glu Gln Gly Glu Ala Val Gly
50 55 60
Ala Val Ser Trp Ala Pro Asp Phe Leu Pro Ser Glu Arg Gly Thr Leu
65 70 75 80
Ile His Phe Tyr Cys Glu Glu Ile Gly Lys Ser Leu Glu Arg Val Leu
85 90 95
Gln Lys Gly Gly Lys Val Ile Thr Pro Glu Thr Glu Ile Asp Ala Glu
100 105 110
Gly Arg Gly His Phe Ala Val Phe Ala Asp Ser Glu Gly Asn His Ile
115 120 125
Gly Leu Tyr Ser Asp Lys
130

<210> 8557
 <211> 256
 <212> PRT
 <213> B.fragilis

<400> 8557

Asn Arg Lys Tyr Ile Val Val Leu Ala Lys Arg Ile Ile Pro Cys Leu
 1 5 10 15
 Asp Ile Lys Asp Gly Gln Thr Val Lys Gly Thr Asn Phe Val Asn Leu
 20 25 30
 Arg Gln Ala Gly Asp Pro Val Glu Leu Gly Arg Ala Tyr Ser Glu Gln
 35 40 45
 Gly Ala Asp Glu Leu Val Phe Leu Asp Ile Thr Ala Ser His Glu Gly
 50 55 60
 Arg Lys Thr Phe Ala Glu Leu Val Arg Arg Ile Ala Ala Asn Ile Ser
 65 70 75 80
 Ile Pro Phe Thr Val Gly Gly Gly Ile Asn Glu Leu Ser Asp Val Asp
 85 90 95
 Arg Leu Leu Asn Ala Gly Ala Asp Lys Ile Ser Ile Asn Ser Ser Ala
 100 105 110
 Ile Arg His Pro Gln Leu Ile Asp Asp Ile Ala Lys His Phe Gly Ser
 115 120 125
 Gln Val Cys Val Leu Ala Val Asp Ala Lys Gln Thr Glu Asn Gly Trp
 130 135 140
 Lys Cys Tyr Leu Asn Gly Gly Arg Ile Glu Thr Asp Lys Glu Leu Thr
 145 150 155 160
 Ala Trp Thr Lys Glu Ala Gln Glu Arg Gly Ala Gly Glu Val Leu Phe
 165 170 175
 Thr Ser Met Asn His Asp Gly Val Lys Thr Gly Tyr Ala Asn Glu Ala
 180 185 190
 Leu Ala Glu Leu Ala Ser Gln Leu Ser Ile Pro Val Ile Ala Ser Gly
 195 200 205
 Gly Ala Gly Arg Met Glu His Phe Arg Asp Ala Phe Thr Leu Gly Lys
 210 215 220
 Ala Asp Ala Ala Leu Ala Ala Ser Val Phe His Phe Gly Glu Ile Lys
 225 230 235 240
 Ile Pro Glu Leu Lys Ser Tyr Leu Cys Gly Gln Gly Ile Thr Val Arg
 245 250 255

<210> 8558

<211> 186

<212> PRT

<213> B.fragilis

<400> 8558

Leu Leu Lys Gln Met Gln Glu Lys Glu Ile Val Arg Lys Leu Lys His
 1 5 10 15
 Gly Asp Gln Glu Ala Phe Ala Phe Leu Tyr Asn His Tyr Trp Lys Gln
 20 25 30
 Val Tyr Asn Phe Thr Arg Leu Tyr Phe Thr Ala Ser Met Asp Ile Glu
 35 40 45
 Glu Ile Val Gln Glu Val Phe Val Lys Val Trp Glu Ser His His Phe
 50 55 60
 Leu Asp Glu Asn Lys Ser Phe Glu Gly Tyr Leu Phe Ile Ile Thr Arg
 65 70 75 80
 Asn Val Ile Phe Asn His Ser Arg Arg Tyr Tyr Lys Glu Thr Ala Leu
 85 90 95
 Lys Ile Thr Ala Ile Gln Ala Val Glu Glu Ser Tyr Asp Met Glu Gly
 100 105 110
 Glu Leu Asp Ala Ala Asp Leu Lys Tyr Ile Asp Glu Leu Val Met
 115 120 125
 Gln Leu Pro Pro Arg Gln Arg Glu Val Phe Arg Met Ser Arg Glu Leu
 130 135 140
 His Met Ser Asn Arg Glu Ile Ala Glu His Phe Ser Ile Thr Glu Lys
 145 150 155 160

Ala Ile Glu Arg His Ile Asn Leu Ala Leu Lys Phe Leu Lys Lys Asn
 165 170 175
 Leu Asn Leu Phe Met Leu Phe Met Ala Ala
 180 185

<210> 8559
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 8559
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 8560
 <211> 194
 <212> PRT
 <213> B.fragilis

<400> 8560
 Asn Glu Phe Lys Thr Ile Thr Val Met Ile Lys Gln Thr Ala Glu Ile
 1 5 10 15
 Phe Glu Ile Leu Ser Lys Gly Gly Phe Ile Ser Ser Asp Ser Thr Asn
 20 25 30
 Pro Asn Ile Arg Gln Leu Tyr Thr Val Ile Glu Asp Asn Gln Ser Glu
 35 40 45
 Leu Tyr Asp Phe Phe Ala Ala Ile Asn Phe Val Leu Glu Ser Gly Asn
 50 55 60
 Glu Tyr Tyr Tyr Phe Ser Arg Arg Glu Asn Lys Val Asp Leu Glu Arg
 65 70 75 80
 Lys Leu Glu Ile Ala Val Arg Trp Ile Asp Val Leu Asp Phe Ile Lys
 85 90 95
 Thr Tyr Asp Ala Ala Phe Ser Ser Gly Phe Arg Phe Gln Pro Ala Asp
 100 105 110
 Met Val Val Lys Val Gly Thr Asp Leu Glu Leu Lys Glu Lys Leu Thr
 115 120 125
 Gly Leu Lys Lys Leu Thr Gly Arg Glu Lys His Glu Glu Met Ile Asp
 130 135 140
 Lys Ile Val Asn Asp Leu Lys Arg Asp Gly Phe Ile Glu Leu Glu Asn
 145 150 155 160
 Glu Ile Thr Ser Thr Tyr Lys Val Val Ala Ala Phe Gly Tyr Leu Glu
 165 170 175
 Glu Leu Val Ala Cys Ile Asn Ile Pro Glu Glu Ile Gln Asn Glu Ile
 180 185 190
 Pro Glu

<210> 8561
 <211> 205

<212> PRT

<213> B.fragilis

<400> 8561

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Tyr Asn Tyr Lys Asn Lys Arg Ile Met Lys Gln Glu Val Leu Phe Ile
1          5          10          15
Ile Leu Asn Glu Tyr Ala Asp Trp Glu Ser Ala Phe Val Ala Ala Ser
20          25          30
Leu His Ser Gly Leu Met Pro Gly Ser Glu Ile Lys Tyr Ile Val Lys
35          40          45
Thr Val Ala Pro Thr Leu Asp Ala Val Cys Ser Leu Gly Gly Phe Arg
50          55          60
Thr Leu Pro Asp Tyr Ser Phe Asp Asn Leu Pro Ser Asp Tyr Thr Ala
65          70          75          80
Leu Val Leu Ile Gly Gly Met Gln Trp Gln Ser Ala Glu Ala Glu Arg
85          90          95
Val Phe Pro Ile Val Gln Asp Ala Phe Glu Lys Gly Lys Val Ile Gly
100          105          110
Gly Ile Cys Asn Ala Ala Ser Phe Leu Cys Ala His Gly Phe Leu Asn
115          120          125
Lys Val Lys His Thr Gly Asn Thr Leu Ala Val Leu Lys Gln Trp Gly
130          135          140
Gly Glu Arg Tyr Thr Asn Glu Asp Gly Tyr Leu Glu Lys Gln Ala Val
145          150          155          160
Gly Asp Lys Asn Ile Val Thr Ala Asn Gly Thr Gly Tyr Leu Glu Phe
165          170          175
Thr Arg Glu Leu Leu Ala Leu Lys Ala Asp Thr Gln Glu Lys Ile
180          185          190
Glu Ala Phe Tyr Asp Phe Ser Lys Asn Gly Leu Val Arg
195          200          205

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<210> 8562

<211> 1126

<212> PRT

<213> B.fragilis

<400> 8562

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Ser Met Asn Lys Phe Leu Phe Ser Cys Gln Lys Arg Cys Leu Lys Tyr
1          5          10          15
Ile Val Met Ala Leu Leu Leu Tyr Pro Leu Ser Ala Leu Ala Ala Gln
20          25          30
Gly Gln Ile Val Val Lys Gly Gln Ser Leu Thr Ile Pro Gln Ala Ile
35          40          45
Arg Leu Ile Glu Lys Ser Ser Gln Tyr Thr Phe Phe Tyr Asn Ala Asn
50          55          60
Asp Leu Lys Asn Thr Thr Leu Lys Ser Ile Asp Cys Lys Gly Ser Ile
65          70          75          80
Asp Asp Val Leu Asn Glu Val Phe Lys Gly Ser Asn Ile Ser Tyr Val
85          90          95
Ile Lys Gly Asn Glu Val Ile Leu Lys Val Glu Lys Thr Glu Ser Thr
100          105          110
Gln Gln Lys Lys Ala Lys Ile Ile Gly Ile Val Thr Asp Ser Lys Thr
115          120          125
Gly Glu Pro Ile Ile Gly Ala Thr Val Gln Leu Leu Gly Thr Thr Thr
130          135          140
Gly Val Ile Thr Asp Val Asp Gly Lys Phe Glu Leu Ala Ala Phe Pro
145          150          155          160
Lys Asn Glu Ile Gln Ile Ser Tyr Ile Gly Tyr Val Thr Lys Lys Val
165          170          175

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Lys Val Gly Ser Gln Lys Val Met Ser Ile Thr Leu Ala Glu Asp Ala
 180 185 190
 Gln Gln Leu Asp Glu Val Val Val Thr Ala Phe Gly Thr Gly Gln Lys
 195 200 205
 Lys Glu Thr Ile Thr Gly Ser Ile Gln Ser Val Arg Pro Ser Asp Leu
 210 215 220
 Leu Val Pro Ser Ala Asn Leu Ser Ser Ser Phe Ala Gly Arg Leu Ser
 225 230 235 240
 Gly Val Ile Ala Tyr Gln Arg Ser Gly Glu Pro Gly Gln Asn Ser Ala
 245 250 255
 Asp Phe Phe Ile Arg Gly Val Ala Thr Met Asn Gly Ala Thr Ser Pro
 260 265 270
 Leu Ile Ile Leu Asp Gly Val Glu Val Ser Lys Ala Asp Leu Asn Ser
 275 280 285
 Leu Asp Pro Glu Val Ile Glu Ser Phe Ser Val Leu Lys Asp Ala Thr
 290 295 300
 Ala Ser Ala Met Tyr Gly Thr Arg Gly Ala Asn Gly Val Leu Ile Val
 305 310 315 320
 Lys Thr Lys Ser Gly Ser Asp Leu Asp Arg Pro Ile Ile Gly Val Arg
 325 330 335
 Leu Glu Gly Tyr Val Asn Thr Pro Thr Lys Lys Pro Glu Ile Val Asp
 340 345 350
 Gly Pro Thr Tyr Met Arg Leu Tyr Asn Glu Ala Val Thr Asn Gln Gly
 355 360 365
 Thr Gly Ala Val Leu Tyr Ser Asp Glu Lys Ile Asn Gly Thr Ile His
 370 375 380
 Asn Leu Asn Pro Tyr Ile Tyr Pro Asn Val Asp Trp Tyr Lys Glu Val
 385 390 395 400
 Phe Lys Asp Ala Thr Phe Asn Gln Lys Ala Asn Phe Asn Val Arg Gly
 405 410 415
 Gly Thr Ser Lys Ile Thr Tyr Phe Met Asn Val Asn Met Asn His Glu
 420 425 430
 Thr Gly Met Leu Lys Asp Arg Ser Ser Asp Phe Phe Ser Tyr Lys Asn
 435 440 445
 Asn Ile Asp Tyr Met Lys Tyr Ala Phe Gln Asn Asn Val Asp Phe His
 450 455 460
 Leu Ser Lys Ser Ser Thr Ile Ser Leu His Leu Asn Val Gln Leu Asn
 465 470 475 480
 Asp Met His Gly Pro Leu Thr Thr Lys Asp Gly Asn Gly Val Gly Asp
 485 490 495
 Ile Phe Ser Ala Ile Met Gly Thr Asn Pro Val Asp Phe Pro Val Met
 500 505 510
 Phe Pro Gln Gly Ser Asn Thr Trp Tyr His Trp Gly Gly Ile Leu Ala
 515 520 525
 Gly Asn Tyr Gln Pro Leu Asn Pro Val Ala Leu Ser Ser Ala Gly Tyr
 530 535 540
 Lys Asp Thr Phe Glu Ser Thr Val Val Ala Asn Val Asn Trp Asp Gln
 545 550 555 560
 Lys Leu Asp Phe Ile Thr Lys Gly Leu Ser Phe Arg Ala Leu Val Ser
 565 570 575
 Phe Lys Asn Trp Ser Tyr Asn Gln Lys Phe Arg Leu Gln Gly Tyr Asn
 580 585 590
 Ser Tyr Gln Leu Ser Asp Tyr Lys Gln Asn Glu Asp Gly Ser Tyr Asp
 595 600 605
 Phe Thr Asn Thr Pro Ile Gly Glu Pro Ser Asn His Thr Met Asp Ala
 610 615 620
 Phe Phe Gly Thr Asn Gly Asp Arg Arg Phe Tyr Ile Gln Gly Tyr Leu
 625 630 635 640
 Asn Tyr Glu Arg Ser Phe Gly Ser His Asn Val Ser Gly Met Leu Leu

645 650 655
 Tyr Asn Gln Asp Asp Tyr Asn Thr Asn Val Asn Ser Ser Leu Ile Ala
 660 665 670
 Ser Leu Pro Lys Arg Lys Met Gly Val Ala Ala Arg Leu Ser Tyr Asp
 675 680 685
 Tyr Asp His Arg Tyr Met Leu Glu Val Asn Ala Gly Tyr Asn Gly Ser
 690 695 700
 Glu Ser Phe Ala Lys Gly His Arg Trp Gly Leu Phe Pro Ser Ile Ser
 705 710 715 720
 Leu Gly Trp Asn Ile Ser Glu Glu Lys Phe Trp Lys Pro Ile Lys Pro
 725 730 735
 Val Ile Ser Asn Phe Lys Val Arg Gly Ser Tyr Gly Leu Val Gly Asn
 740 745 750
 Asp Gln Ile Gly Ser Asp Arg Phe Ala Tyr Leu Ala Ile Val Asn Leu
 755 760 765
 Thr Glu Ser Pro Ser Tyr Thr Thr Gly Tyr Gly Gly Ser Thr Thr Ser
 770 775 780
 Leu Ser Gly Pro Thr Tyr Asn Arg Phe Gln Asn Asn Glu Leu Thr Trp
 785 790 795 800
 Glu Val Gly Asn Lys Leu Asn Val Gly Val Asp Leu Gln Leu Phe Asn
 805 810 815
 Ser Leu Asn Ile Thr Val Asp Gly Phe Arg Glu Ile Arg Asp Asn Ile
 820 825 830
 Phe Gln Gln Lys Asn Ser Ile Pro Asn Tyr Leu Gly Thr Ala Ser Thr
 835 840 845
 Lys Ile Tyr Gly Asn Phe Ala Lys Val Lys Asn Thr Gly Phe Asp Leu
 850 855 860
 Ala Leu Asp Tyr Gly Lys Gln Leu Asn Arg Asn Phe Ser Ile Gln Met
 865 870 875 880
 Lys Gly Thr Phe Thr Tyr Ala His Asn Glu Val Leu Lys Tyr Asp Glu
 885 890 895
 Ala Ala Gly Leu Arg Pro Ala Leu Ser Gln Val Gly Lys Ser Leu Asn
 900 905 910
 Ser Ile Trp Gly Tyr Val Ala Asp Gly Leu Tyr Ile Asp Glu Ala Asp
 915 920 925
 Ile Ala Asn Asn Pro Gln Ser Thr Ile Gly Asn Ile Ala Ile Ala Pro
 930 935 940
 Gly Asp Val Lys Tyr Val Asp Gln Pro Asp Ala Ser Gly Asn Tyr Asp
 945 950 955 960
 Gly Lys Ile Thr Ser Asp Asp Arg Val Val Leu Gly Tyr Pro Thr Ile
 965 970 975
 Pro Glu Ile Ile Tyr Gly Phe Gly Pro Ser Ile Thr Trp Lys Asn Trp
 980 985 990
 Asp Phe Ser Phe Phe Phe Gln Gly Gln Ala Arg Val Ser Phe Met Met
 995 1000 1005
 Ser Gly Phe Glu Pro Phe Gly Thr Gln Ser Lys Asn Asn Val Leu Lys
 1010 1015 1020
 Trp Ile Ser Asp Asp His Trp Ser Lys Asp Asn Gln Asn Pro Asn Ala
 1025 1030 1035 1040
 Arg Tyr Pro Arg Leu Thr Gln Tyr Asn Asn Asn Asn Thr Ala Ser
 1045 1050 1055
 Ser Ser Tyr Trp Ala Ala Asn Ala Ser Phe Leu Lys Leu Gln Asn Ala
 1060 1065 1070
 Glu Asn Arg Tyr Arg Phe Lys Trp Ala Arg Ile Tyr Val Asn Gly Ser
 1075 1080 1085
 Asn Leu Leu Thr Phe Ser Pro Phe Lys Leu Trp Asp Pro Glu Met Gly
 1090 1095 1100
 Gly Gly Ala Gly Met Lys Tyr Pro Thr Gln Arg Thr Tyr Asn Val Gly
 1105 1110 1115 1120

Ile Gln Leu Thr Phe Lys
1125

<210> 8563
<211> 102
<212> PRT
<213> B.fragilis

<400> 8563
Gln Arg Leu Lys Leu Ser Lys Asn Arg Ile Asp Gln Glu Lys Arg Val
1 5 10 15
Val Glu Leu Met Ile Arg Leu Tyr Cys Arg Lys Lys Glu Lys Asn Val
20 25 30
Thr Leu Cys Pro Arg Cys Glu Glu Leu Leu His Tyr Ala His Ala Arg
35 40 45
Leu Asp His Cys Pro Phe Gly Glu Lys Lys Lys Ala Cys Lys Gln Cys
50 55 60
Ser Ile His Cys Tyr Lys Pro Ala Met Arg Glu Gln Met Arg Arg Val
65 70 75 80
Met Arg Phe Ser Gly Pro Arg Met Leu Ile Tyr Ala Pro Trp Glu Ala
85 90 95
Ile Lys His Leu Leu Gly
100

<210> 8564
<211> 89
<212> PRT
<213> B.fragilis

<400> 8564
His Lys Ile Asn Leu Asn Ile Ile Ile Lys Met Asn Lys Ser Asn Lys
1 5 10 15
Glu Thr Asn Leu Ile Lys Lys Leu Leu Ala Asp Gln Leu Asp Lys Lys
20 25 30
Glu Arg Lys Lys Leu Tyr Tyr Ser Asn Leu Ile Glu Lys Gln Met Arg
35 40 45
Lys Gln Trp Lys Glu Asn Lys Asn Thr Pro Val Glu Asn Glu Ile Gly
50 55 60
Asn Lys Ile Trp Asp Lys Ile Glu Asn Gln Cys Ile Lys Val His Lys
65 70 75 80
Arg Ile Val Pro Leu Glu Leu Ile Gln
85

<210> 8565
<211> 96
<212> PRT
<213> B.fragilis

<400> 8565
Pro Ile Lys Asn Arg Lys Arg Met Glu Gln Lys Phe Cys Gln Ser Cys
1 5 10 15
Gly Met Pro Leu Asn Pro Glu Val Leu Gly Thr Glu Lys Asp Gly Ser
20 25 30
Lys Asn Glu Glu Tyr Cys Thr Tyr Cys Tyr Ala Asp Gly His Phe Thr
35 40 45
Val Glu Cys Thr Met Asp Glu Met Ile Asn Gln Cys Ala Gln Phe Val
50 55 60
Asp Glu Phe Asn Lys Gly Ser Glu Val Lys Met Thr Lys Glu Glu Ala
65 70 75 80

Ile Ala Asn Met Lys Gln Phe Phe Pro Met Leu Lys Arg Trp Lys Gln
 85 90 95

<210> 8566
 <211> 287
 <212> PRT
 <213> B.fragilis

<400> 8566

Lys Ser Met Lys Ser Ser Arg Asn Thr Ser Thr Ser Gly Lys Pro Ala
 1 5 10 15
 Ser Gly Arg Arg Thr Pro Ala Arg Lys Thr Lys Ala Lys Lys Lys Thr
 20 25 30
 Thr Arg Thr Met Pro Val Trp Met Arg Asn Thr Leu Ala Leu Ile Val
 35 40 45
 Val Gly Val Phe Ser Leu Thr Phe Tyr Tyr Phe Val Ile Arg Pro Tyr
 50 55 60
 Ser Tyr Arg Trp Lys Glu Cys Tyr Gly Arg Lys Glu Tyr Gly Val Cys
 65 70 75 80
 Ile Pro Cys Gly Tyr Glu Val His Gly Ile Asp Ile Ser His Tyr Gln
 85 90 95
 Gly Asn Ile Asp Trp Lys Glu Leu Lys Gln Asn Arg Glu Thr Asp Phe
 100 105 110
 Pro Leu His Phe Ile Phe Met Lys Ala Thr Glu Gly Gly Asp His Gly
 115 120 125
 Asp Asp Thr Phe Lys Asp Asn Phe Glu Gln Ala Arg Arg Tyr Gly Phe
 130 135 140
 Ile Arg Gly Ala Tyr His Phe Phe Thr Pro Arg Thr Asp Ala Leu Lys
 145 150 155 160
 Gln Ala Asp Phe Phe Ile Arg Thr Val Lys Leu Asp Ser Gly Asp Leu
 165 170 175
 Pro Pro Val Leu Asp Val Glu Leu Thr Gly Lys Arg Pro Lys Lys Glu
 180 185 190
 Leu Gln Gln Asn Ile Lys Lys Trp Leu Asp Arg Val Glu Ala His Tyr
 195 200 205
 Gly Val Lys Pro Ile Leu Tyr Thr Ser Tyr Lys Phe Lys Thr Arg Tyr
 210 215 220
 Leu Asp Asp Ser Leu Phe Asn Ala Tyr Pro Tyr Trp Ile Ala His Tyr
 225 230 235 240
 Tyr Val Asp Ser Val Arg Tyr Glu Gly Lys Trp His Phe Trp Gln His
 245 250 255
 Thr Asp Ile Gly Ser Val Pro Gly Ile His His Asp Val Asp Leu Asn
 260 265 270
 Val Phe Asn Gly Ser Leu Glu Glu Leu Arg Lys Met Thr Met Arg
 275 280 285

<210> 8567
 <211> 137
 <212> PRT
 <213> B.fragilis

<400> 8567

Tyr Thr Met Lys Ser Leu Asn Glu Arg Ala Ala Asp Leu Leu Gln Gly
 1 5 10 15
 Cys Glu Thr Val Ile Leu Ser Ser Val Asn Gln Glu Gly Tyr Pro Arg
 20 25 30
 Pro Val Pro Leu Ser Lys Ile Ala Ser Glu Gly Ile Ser Glu Ile Trp
 35 40 45
 Met Ala Thr Gly Glu His Ser Val Lys Thr Lys Asp Phe Arg Ser Asn

50 55 60
 Pro Lys Ala Gly Leu Cys Phe Tyr Glu Gln Gly Asn Ser Val Ala Leu
 65 70 75 80
 Thr Gly Glu Ile Glu Val Val Thr Asp Ala Gly Leu Lys Gln Lys Tyr
 85 90 95
 Trp Gln Asp Trp Phe Ile Ala His Phe Pro Lys Gly Pro Thr Asp Pro
 100 105 110
 Glu Tyr Val Leu Leu Lys Phe Arg Ser Glu His Ala Thr Phe Trp Ile
 115 120 125
 Asp Gly Gln Phe Val His Arg Asn Ile
 130 135

<210> 8568
 <211> 302
 <212> PRT
 <213> B.fragilis

<400> 8568
 Arg Glu Met Lys Met Lys Lys Ile Leu Leu Gly Leu Cys Val Ile Leu
 1 5 10 15
 Gly Leu Ile Asn Met Ile Gly Cys Ser Ser Asp Glu Lys Tyr Pro Met
 20 25 30
 Pro Thr Ser Ile Asp Gln Asn Ser Leu Ser Ala Glu Ala Lys Ala Gly
 35 40 45
 Ala Ile Lys Leu Lys Trp Thr Val Pro Ala Asp Ser Asn Tyr Tyr Tyr
 50 55 60
 Val Lys Val Thr Tyr Thr Leu Pro Glu Asp Gly Lys Lys Cys Met Arg
 65 70 75 80
 Leu Ala Ser Val Asn Ser Asp Thr Met Leu Val Asp Asn Leu Leu His
 85 90 95
 Arg Tyr Gly Asp Ile Asn Phe Thr Leu Gln Pro Cys Asn Arg Ala Gly
 100 105 110
 Glu Ala Ser Gln Ser Cys Ser Ile Met Ala Gln Ala Leu Pro Ala Leu
 115 120 125
 Lys Gln Ile Lys Thr Asp Arg Asn Pro Ile Thr Leu Ser Ala Lys Gln
 130 135 140
 Leu Tyr Thr Asp Asp Gln Glu Ser Ser Glu Gly Pro Ile Ala Asn Leu
 145 150 155 160
 Val Asp Gly Arg Asn Asp Thr Tyr Phe His Met Ser Trp Ser Ser Pro
 165 170 175
 Thr Pro Phe Pro His Tyr Ile Val Val Asp Leu Gly Glu Glu Asn Ala
 180 185 190
 Leu Ser Thr Phe Leu Phe Ser Tyr Val Cys Arg Asp Asn Asn Asn Lys
 195 200 205
 Asp Asn Pro Lys Glu Met Asp Ile Leu Gly Ser Asn Thr Phe Asp Gly
 210 215 220
 Lys Asn Tyr Asp Glu Ser Gln Thr Thr Leu Leu Ala Ser Leu Ser Asn
 225 230 235 240
 Leu Pro Asn Thr Lys Ala Ala Ser Tyr Glu Ser Asp Ile Ile Lys Ala
 245 250 255
 Gly Ala Ser Tyr Arg Tyr Leu Trp Phe Lys Val Lys Ser Ser Thr Ser
 260 265 270
 Gly Ser Asn Trp Ile Ala Leu Ala Glu Leu Gly Leu Ser Lys Val Ile
 275 280 285
 Val Lys Thr Tyr Asp Pro Glu Thr Gly Glu Thr Thr Ile Glu
 290 295 300

<210> 8569
 <211> 360

<212> PRT

<213> B.fragilis

<400> 8569

Lys Glu Ser Asp Ser Tyr Met Met Thr Leu Asn Asp Phe Glu Asn Tyr
 1 5 10 15
 Val Pro Cys Lys Ile Trp Ala Arg Gly Glu Glu Tyr Tyr Glu Cys Asp
 20 25 30
 Ala Val Lys Asp Leu Glu Glu Thr Glu Pro Gly Glu Trp Ile Ala Thr
 35 40 45
 Val Glu Gly Thr Glu Asp Tyr Glu Val Glu Ile Ser Leu Glu Gly Lys
 50 55 60
 Lys Ile Ile His Trp Ser Cys Asp Cys Pro Tyr Glu Gly Asp Ile Cys
 65 70 75 80
 Lys His Val Val Ala Thr Val Leu Ala Ile Arg Asn Asn Arg Ser Gly
 85 90 95
 Gln Lys Arg Phe Leu Ser Ala Arg Glu Ala Lys Leu Met Glu Lys Gln
 100 105 110
 Gln Ala Thr Leu Lys Asp Lys Lys Val Glu Asp Ile Leu Ala Phe Val
 115 120 125
 Pro Ser Asp Gln Leu Ser Asp Phe Val Leu Glu Tyr Ala Ser Lys His
 130 135 140
 Thr Glu Cys Lys Gln Ala Leu Leu Glu Lys Phe Leu Pro Lys Pro Gln
 145 150 155 160
 Ala Asn Gly Lys Ser Pro Lys Asn Tyr Gly Asn Asp Ile Arg Lys Cys
 165 170 175
 Phe Asn Asp Ser Tyr Val Glu Thr Lys Gly Arg Tyr Gly Tyr Tyr
 180 185 190
 Glu Pro Thr Met Asp Trp Asn Lys Val Gly Cys Glu Leu Asn Lys Tyr
 195 200 205
 Leu Lys Lys Ala Lys Leu Leu Val Glu Gln His Cys Phe Glu Asp Ala
 210 215 220
 Ala Ala Ile Ala Thr Gly Ile Leu Arg Ala Ile Gly Glu Asn Tyr Ile
 225 230 235 240
 Glu Glu Asp Leu Val Tyr His Asn Glu Phe Glu Ala Asn Phe Tyr Cys
 245 250 255
 Glu Cys Ser Gly Glu Leu Leu Leu Glu Ile Ile Tyr Arg Pro Glu Ile
 260 265 270
 Thr Gly Ser Gln Lys Ile Met Ile Leu Asn Glu Val Arg Gln Ile Glu
 275 280 285
 Lys Leu Asp Thr Tyr Arg Glu Tyr Asp Val Tyr Asp Ile Asp Leu Leu
 290 295 300
 Leu Ser Gln Ile Thr Ile Ala Thr Gln Thr Gln Glu Glu Ala Leu Thr
 305 310 315 320
 Tyr Ile Asn Gln Leu Ile Glu Glu Arg Lys Ser Ser Trp Glu Leu Tyr
 325 330 335
 Lys Leu Ile Glu Lys Lys Ile Asn Ile Ser Leu Ile Pro Gln His Tyr
 340 345 350
 Asn Leu Thr Leu Phe Ile Ser Ser
 355 360

<210> 8570

<211> 88

<212> PRT

<213> B.fragilis

<400> 8570

Lys Met Glu Glu Tyr Glu Val Ile His Arg Pro Glu Arg Asn Arg Phe
 1 5 10 15

Glu Leu Glu Lys Asn Gly Met Thr Ala Phe Val Glu Tyr Glu Val Glu
 20 25 30
 Asp Gly Ala Leu Asp Ile Met His Thr Ile Val Pro Pro Pro Leu Glu
 35 40 45
 Gly Lys Gly Ile Ala Ala Ala Leu Val Glu Ala Thr Tyr Lys Tyr Ala
 50 55 60
 Ser Ala Gln Gly Leu Lys Pro Lys Ala Thr Cys Ser Tyr Ala Val Ala
 65 70 75 80
 Trp Leu Lys Arg His Pro Ala Glu
 85

<210> 8571
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 8571
 Lys Val Arg Glu Asn Thr Pro Thr Thr Ile Ser Ala Arg Val Leu Arg
 1 5 10 15
 Ile Gln Thr Gly Met Val Arg Val Val Phe Phe Phe Ala Phe Val Phe
 20 25 30
 Arg Ala Gly Val Arg Arg Pro Glu Ala Gly Leu Pro Glu Val Glu Val
 35 40 45
 Phe Arg Glu Asp Phe Ile Asp Phe Tyr Ser Tyr Leu Glu Phe Asp Ser
 50 55 60
 Pro Gln Ile Thr Arg Ile Phe Thr Asp
 65 70

<210> 8572
 <211> 234
 <212> PRT
 <213> B.fragilis

<400> 8572
 Arg Leu Met Asp Glu Thr Leu Ile His Tyr Thr Asp Val Glu Ile His
 1 5 10 15
 Gln Gln Glu Leu Cys Val Leu Ser Glu Val Asn Leu Gln Leu His Lys
 20 25 30
 Gly Glu Phe Val Tyr Leu Val Gly Lys Val Gly Ser Gly Lys Thr Ser
 35 40 45
 Leu Leu Lys Thr Leu Tyr Gly Glu Leu Asp Val Thr Ala Gly Glu Ala
 50 55 60
 Glu Val Leu Gly Tyr Arg Met Thr Ser Ile Lys Arg Lys His Ile Pro
 65 70 75 80
 Gln Leu Arg Arg Lys Leu Gly Ile Val Phe Gln Asp Phe Gln Leu Leu
 85 90 95
 Thr Asp Arg Thr Val Asn Asp Asn Leu Glu Phe Val Leu Arg Ala Thr
 100 105 110
 Gly Trp Lys Asn Lys Gln Glu Ile Lys Glu Arg Ile Ala Glu Val Leu
 115 120 125
 Asn Leu Val Gly Met Glu Asn Lys Gly Tyr Lys Leu Pro Asn Glu Leu
 130 135 140
 Ser Gly Gly Glu Gln Gln Arg Ile Val Ile Ala Arg Ala Met Leu Asn
 145 150 155 160
 Ser Pro Glu Ile Ile Leu Ala Asp Glu Pro Thr Gly Asn Leu Asp Val
 165 170 175
 Glu Thr Gly Lys Ala Ile Val Glu Leu His Asn Ile Cys Gln Thr
 180 185 190
 Gly Ser Leu Val Val Met Thr Thr His Asn Leu Gln Leu Val Ala Glu

195	200	205
Tyr Pro Gly Gln Val	Tyr Arg Cys Ala Glu His	Arg Ile Val Asn Val
210	215	220
Thr Asp Glu Phe Val	Lys Lys Glu Asn Asn	
225	230	

<210> 8573
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 8573
 Arg Ile Ala Glu Glu Leu Met Glu Ile Leu Ser Ala Pro Ala Leu Ser
 1 5 10 15
 Arg Arg Ser Thr Ser Leu Asn Ser Leu Ile Pro Pro Pro Thr Val Asn
 20 25 30
 Gly Ile Leu Ile Leu Ala Ala Ile Arg Arg Thr Ser Ser Ala Lys Val
 35 40 45
 Leu Arg Pro Ser Trp Leu Ala Val Met Ser Arg Lys Thr Asn Ser Ser
 50 55 60
 Ala Pro Cys Ser Leu
 65

<210> 8574
 <211> 128
 <212> PRT
 <213> B.fragilis

<400> 8574
 Leu Phe Thr Cys Thr Phe Ser Phe Arg Phe Gly Thr Ile Leu Ala Ile
 1 5 10 15
 Cys Leu Ser Gln Lys Lys Ser Cys Val Met Glu Glu Tyr Leu Ser Ala
 20 25 30
 Asp Ile Tyr Val Ser Lys Arg Asn Asn Ser Leu Ile Asn Gly Lys Met
 35 40 45
 Ile Gly Arg Val Leu Gly Ile Leu Leu Phe Ile Glu Ala Gly Met Phe
 50 55 60
 Val Leu Cys Ser Gly Ile Ser Val Val Tyr Gly Glu Ser Asp Tyr Lys
 65 70 75 80
 Tyr Phe Leu Tyr Thr Ala Gly Ile Asn Leu Leu Ser Gly Ala Leu Leu
 85 90 95
 Val Phe Tyr Gly Arg Gly Ala Glu Asn Arg Leu Ser Arg Arg Asp Gly
 100 105 110
 Tyr Cys Ile Glu Thr Leu Ser Trp Val Phe Phe Thr Leu Phe Gly Met
 115 120 125

<210> 8575
 <211> 257
 <212> PRT
 <213> B.fragilis

<400> 8575
 Lys Trp Thr Cys Glu Ile Ala Thr Tyr Ser Ser Ser Ile Arg Asp Asn
 1 5 10 15
 Met Lys Lys Gly Phe Thr Ile Leu Leu Phe Leu Phe Ser Leu Ala Glu
 20 25 30
 Val Tyr Ala Gln Thr Glu Phe Thr Thr Cys Leu Phe Asp Ser Ser Arg
 35 40 45
 Asn Arg Ile Val Pro Val Ala Ile Tyr Gln Pro Arg Lys Glu Thr Pro

50 55 60
 Lys Thr Arg Val Ile Ile Phe Asn His Gly Tyr Asp Gly Asn Lys Asn
 65 70 75 80
 Asp Lys Ser Asn Arg Ser Tyr Ser Tyr Leu Thr Arg Phe Leu Ala Glu
 85 90 95
 Lys Gly Tyr Tyr Val Ile Ser Ile Gln His Glu Leu Ser Asp Asp Pro
 100 105 110
 Leu Leu Ala Met Glu Gly Asn Phe Met Glu Thr Arg Met Pro Asn Trp
 115 120 125
 Lys Arg Gly Glu Glu Asn Ile Leu Phe Thr Ile Arg Glu Phe Lys Lys
 130 135 140
 Leu Lys Pro Asn Leu Gln Trp Glu Lys Leu Cys Val Ile Gly His Ser
 145 150 155 160
 Asn Gly Gly Asp Ile Thr Met Leu Thr Ala Thr Asp His Pro Glu Leu
 165 170 175
 Ile Met Lys Ala Ile Ser Met Asp His Arg Arg Met Ile Ile Pro Arg
 180 185 190
 Thr Gln Lys Pro Arg Ile Tyr Thr Leu Arg Gly Cys Asp Tyr Asp Ala
 195 200 205
 Asp Pro Asp Val Val Pro Thr Ser Glu Glu Gln Lys Lys Phe Arg Ile
 210 215 220
 Glu Val Val Arg Leu Asp Gly Val Thr His Ser Asn Met Gly Glu Asn
 225 230 235 240
 Gly Ser Ala Glu Gln His Asp Leu Ile Asn Arg His Ile Tyr Ile Leu
 245 250 255
 Lys

<210> 8576
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 8576
 Ser Ile Pro Arg Ile Gly Trp Ala Thr Arg Ser Gln Ser Arg Ser His
 1 5 10 15
 Ile Thr Asp Thr Gly Asp His Arg Thr Asp Gly Leu Gly Lys Ala Asp
 20 25 30
 Thr Gln Glu Gln Glu Asn Cys Pro Thr Lys Asn Asp Asp Lys Ile
 35 40 45
 Lys Ser Lys Lys His Thr His Ser Arg His Asn Arg Arg
 50 55 60

<210> 8577
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 8577
 Val Lys Leu Arg Ala Leu Ile Leu Arg Tyr Lys Glu Ser Val Leu Ile
 1 5 10 15
 Arg Val Ile Arg Gly Glu Pro Lys Asn Gly Ser Phe Ser Glu Gln Ala
 20 25 30
 Ser Ile Arg Thr Val Tyr Ser Ala Gly Cys Arg Phe Ser His Ala Thr
 35 40 45
 Ala Tyr Glu His Val Ala Leu Gly Phe Asn Pro Cys Ala Glu Ala Tyr
 50 55 60

Leu
 65

<210> 8578
 <211> 274
 <212> PRT
 <213> B.fragilis

<400> 8578

Ser Met Tyr Arg Glu Tyr Gln Pro Cys Gly Leu Leu Ala Pro Tyr Val
 1 5 10 15
 Asp Lys Ile Trp Glu Phe Lys Gly Ser Pro Glu Tyr Gly Met Arg Ile
 20 25 30
 Asn Val Leu Pro Asp Gly Cys Thr Asp Leu Ile Phe Ala Leu Gly Gly
 35 40 45
 Ile Thr Gln Pro Val Gly Asn Glu Gly Arg Ile Met Pro Ser Cys Arg
 50 55 60
 Ser Phe Phe Val Gly Pro Met Lys Arg Tyr Ser Glu Leu Val Ala Tyr
 65 70 75 80
 Thr Glu Thr Val His Met Val Gly Ile Arg Phe His Pro Cys Gly Leu
 85 90 95
 Phe Arg Phe Met Asp Leu Pro Val Gln Glu Leu Gly Gly Gln Arg Ile
 100 105 110
 Ser Ser Ala Asp Leu Gly Ile Lys Leu Phe Asp Asp Ser Phe Thr Glu
 115 120 125
 Arg Leu Tyr Glu Leu Pro Asp Leu Arg Ser Arg Ile Gln Cys Ile Glu
 130 135 140
 Thr Val Leu Val Arg Ser Met His Lys His Asp Val Val Asp Lys Gln
 145 150 155 160
 Ile Val Phe Ala Val Asn His Ile His Leu Tyr His Gly Gln Arg Glu
 165 170 175
 Ile Arg Leu Leu Ala Glu Asp Thr Cys Leu Cys Gln Arg His Leu Glu
 180 185 190
 Arg Arg Phe Lys Leu Phe Thr Gly Phe Thr Pro Lys Glu Tyr Ser Arg
 195 200 205
 Ile Val Lys Phe Arg Gln Ala Ile Asp Leu Leu Lys Asn Thr Thr Glu
 210 215 220
 Ala Asn Asn Leu Leu Ser Val Ala Val Asn Ala Gly Tyr Tyr Asp Val
 225 230 235 240
 Ser His Phe Leu Lys Glu Val Lys Thr Leu Ser Gly Gly Thr Ala Glu
 245 250 255
 Ser Phe Leu Ser Pro Thr Leu Pro Gln Glu Gly Leu Leu Thr Tyr Ile
 260 265 270
 Glu Lys

<210> 8579
 <211> 244
 <212> PRT
 <213> B.fragilis

<400> 8579

Ile Glu Asn Arg Gln Met Ile Glu Leu Ile Pro Ala Ile Asp Ile Ile
 1 5 10 15
 Asp Gly Lys Cys Val Arg Leu Ser Gln Gly Asp Tyr Gly Ser Lys Lys
 20 25 30
 Val Tyr Asn Glu Asn Pro Val Glu Val Ala Lys Glu Phe Glu Ala Asn
 35 40 45
 Gly Ile Arg Arg Leu His Val Val Asp Leu Asp Gly Ala Ala Ser His
 50 55 60
 His Val Val Asn Tyr Arg Thr Leu Asp Leu Ile Ala Ser Arg Thr Ser

65		70		75		80									
Leu	Ile	Ile	Asp	Phe	Gly	Gly	Gly	Leu	Lys	Ser	Asp	Glu	Asp	Leu	Ile
		85						90						95	
Ile	Ala	Phe	Glu	Asn	Gly	Ala	Gln	Met	Val	Thr	Gly	Gly	Ser	Ile	Ala
		100						105					110		
Val	Arg	Asn	Pro	Asp	Leu	Phe	Cys	Arg	Trp	Ile	Asp	Arg	Tyr	Gly	Ser
		115					120					125			
Gly	Lys	Ile	Ile	Leu	Gly	Ala	Asp	Val	Lys	Asp	Arg	Arg	Ile	Ala	Val
		130				135					140				
Asn	Gly	Trp	Lys	Asp	Glu	Ser	Thr	Cys	Glu	Leu	Phe	Pro	Phe	Leu	Lys
		145			150				155						160
Asp	Tyr	Thr	Gln	Lys	Gly	Ile	Glu	Lys	Val	Ile	Cys	Thr	Asp	Ile	Ser
			165						170					175	
Cys	Asp	Gly	Met	Leu	Ala	Gly	Pro	Ser	Leu	Asp	Leu	Tyr	Lys	Glu	Ile
		180						185					190		
Leu	Ala	Glu	His	Pro	Thr	Leu	Tyr	Leu	Ile	Ala	Ser	Gly	Gly	Val	Ser
		195					200					205			
Ser	Ile	Ala	Asp	Ile	Glu	Ala	Leu	His	Glu	Ala	Gly	Val	Pro	Ala	Val
		210				215					220				
Ile	Phe	Gly	Lys	Ala	Leu	Tyr	Glu	Gly	Arg	Ile	Thr	Leu	Lys	Glu	Leu
		225			230				235						240
Gln	Ala	Phe	Leu												

<210> 8580

<211> 60

<212> PRT

<213> B.fragilis

<400> 8580

Thr	Leu	Pro	Arg	Gly	Leu	Arg	Thr	Ala	Leu	Pro	Val	Gly	Lys	Ser	Asp
1				5					10				15		
Glu	Arg	Leu	Leu	Leu	Gly	Gly	Val	Ile	Ser	Asn	Cys	Phe	Asp	Ser	Ser
			20				25					30			
Asp	Arg	Leu	His	Ile	Leu	His	Ile	Ile	Asp	Leu	Ser	Lys	Asp	Lys	Arg
		35				40						45			
Phe	Tyr	Arg	Asn	Asn	Asp	Leu	Leu	Leu	Val	Thr	Ile				
	50					55					60				

<210> 8581

<211> 639

<212> PRT

<213> B.fragilis

<400> 8581

Tyr	Ile	Leu	Met	Lys	Ile	Ile	Tyr	Lys	Leu	Leu	Phe	Leu	Phe	Leu	Leu
1				5					10				15		
Thr	Ile	Gly	Tyr	Ser	Ser	Cys	Asp	Phe	Leu	Asp	Ile	Val	Pro	Asp	Glu
		20					25					30			
Ile	Thr	Thr	Glu	Ala	Asp	Ala	Phe	Lys	Asp	Arg	Asn	Ala	Ala	Lys	Asn
		35				40						45			
Phe	Val	Tyr	Ser	Cys	Tyr	Gly	Tyr	Leu	Pro	Gln	Ser	Asn	Val	Ala	Ser
	50					55					60				
Gly	Ser	Leu	Asp	Leu	Leu	Thr	Gly	Asp	Glu	Val	Ile	Thr	Ala	Phe	Glu
65				70					75					80	
His	Glu	Thr	Phe	Ala	Ser	Phe	Pro	Lys	Gly	Asn	Tyr	Thr	Ala	Ser	Ser
			85					90					95		
Pro	Val	Ile	Ser	Tyr	Trp	Asn	Thr	Phe	Phe	Gln	Gly	Leu	Arg	Gln	Cys
		100						105					110		

Tyr Ile Phe Leu Glu Asn Val Asp Lys Val Pro Asp Leu Thr Glu Ser
 115 120 125
 Val Lys Thr Asp Tyr Ile Ala Gln Val Lys Phe Leu Ile Ala Tyr Tyr
 130 135 140
 His Tyr Gln Leu Ala Arg Cys Tyr Gly Pro Ile Ile Leu Ile Lys Glu
 145 150 155 160
 Leu Pro Asp Val Asn Ala Ser Gln Ala Glu Tyr Leu Pro Arg Thr Ser
 165 170 175
 Tyr Asp Glu Cys Val Asp Trp Ile Cys Asn Leu Leu Asp Glu Ala Ala
 180 185 190
 Ser Ser Leu Pro Ala Ile Arg Thr Asn Lys Glu Asp Tyr Gly Leu Ala
 195 200 205
 Thr Ser Val Gly Ala Lys Ala Val Lys Ala Lys Met Leu Leu Tyr Ala
 210 215 220
 Ala Ser Pro Leu Phe Asn Gly Asn Ser Ser Phe Tyr Ser Asn Phe Thr
 225 230 235 240
 Asp Lys Ser Gly Ser Gln Leu Met Pro Leu Thr Tyr Asp Pro Asn Lys
 245 250 255
 Trp Val Lys Ala Lys Thr Ala Ile Lys Glu Ala Ile Asp Leu Ala Glu
 260 265 270
 Gln Asn Gly His Ala Leu Tyr Val Lys Gln Asp Tyr Lys Ile Gly Asn
 275 280 285
 Glu Asp Ala Asn Pro Tyr Pro Ala Ala Gly Pro Val Arg Cys Leu Arg
 290 295 300
 Thr Ser Leu Val Asp Trp Asp Ser Arg Asn Pro Glu Val Leu Leu Ala
 305 310 315 320
 Glu Thr Arg Ser Glu Gly Ser Tyr Gly Ile Gln Asn Lys Ser Leu Pro
 325 330 335
 Phe Val Thr Asp Gly Trp Ala Trp Asn Gly Val Gly Pro Thr Trp Thr
 340 345 350
 Met Leu Asn Arg Phe Tyr Thr Lys Asn Gly Leu Pro Trp Asp Glu Asp
 355 360 365
 Pro Glu Tyr Lys Asp Lys Asp Lys Leu Lys Ile Val Asn Val Asp Ala
 370 375 380
 Ser His Ala Asp Glu Ala His Glu Gly Ser Lys Thr Leu Leu Phe Asn
 385 390 395 400
 Leu Asp Arg Glu Pro Arg Phe Tyr Ala Trp Val Ala Phe Gln Gly Gly
 405 410 415
 Tyr Tyr Glu Val Met Asn Gly Ser Thr Asn Pro Ala Tyr Val Met Ser
 420 425 430
 Asn Gly Lys Lys Asp Asn Ser Asp Ser Arg Leu Ile Cys Asp Phe Val
 435 440 445
 Leu Gly Gly Asn Cys Ser Arg Gly Thr Ala Thr Val Gln Arg Pro Gly
 450 455 460
 Asn Tyr Thr Pro Ser Gly Tyr Leu Asn Lys Lys Gly Val Asp Pro Asn
 465 470 475 480
 Thr Val Val Ser Thr Asn Ala Thr Lys Leu Asn Gln Tyr Pro Trp Pro
 485 490 495
 Ile Ile Arg Leu Ala Asp Leu Tyr Leu Ala Tyr Ala Glu Ala Cys Val
 500 505 510
 Glu Thr Asn Asp Leu Glu Thr Ala Lys Gln Tyr Leu Asn Lys Val Arg
 515 520 525
 Glu Arg Ala Gly Ile Pro Thr Val Glu Thr Ala Trp Ser Gly Val Ala
 530 535 540
 Ala Leu Asp Gln Thr Lys Leu Arg Gln Ile Val Arg Gln Glu Arg Met
 545 550 555 560
 Asn Glu Leu Tyr Leu Glu Asn Gln Asn Phe Trp Asp Met Arg Arg Trp
 565 570 575
 Leu Leu Ala Gly Gln Tyr Phe Asn Val Lys Ala Lys Gly Leu Asn Ile

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	580		585		590										
Ala	Ala	Thr	Thr	Ile	Glu	Asp	Tyr	Ala	Ile	Val	Lys	Thr	Ile	Asp	Phe
	595						600					605			
Glu	Arg	Lys	Phe	Glu	Ala	Pro	Thr	Gln	Tyr	Leu	Leu	Pro	Ile	Pro	Ser
	610					615					620				
Ala	Asp	Ile	Asn	Arg	Asn	Glu	Lys	Leu	Val	Asn	Asn	Pro	Gly	Tyr	
625					630					635					

<210> 8582

<211> 395

<212> PRT

<213> B.fragilis

<400> 8582

Ser	Asn	Asn	Ile	Thr	Met	Thr	Lys	Arg	Ile	Gly	Asn	Ser	Arg	Leu	Tyr
1			5					10						15	
Ile	Leu	Ile	Phe	Ile	Gly	Ile	Val	Ser	Ala	Phe	Gly	Pro	Phe	Val	Thr
			20				25					30			
Asp	Phe	Tyr	Leu	Pro	Ala	Leu	Pro	Val	Leu	Ser	Glu	Tyr	Phe	Asp	Thr
	35					40					45				
Thr	Ala	Ser	Leu	Val	Gln	Leu	Ser	Leu	Thr	Phe	Ser	Met	Val	Gly	Leu
	50				55						60				
Ala	Val	Gly	Gln	Leu	Ile	Gly	Pro	Leu	Ser	Asp	Lys	Tyr	Gly	Arg	
65				70					75					80	
Lys	Leu	Pro	Leu	Met	Val	Ser	Leu	Val	Ile	Phe	Cys	Ile	Ser	Thr	Val
			85					90						95	
Gly	Cys	Leu	Tyr	Ser	Pro	Glu	Ile	His	Gly	Phe	Ile	Phe	Ala	Arg	Leu
			100				105						110		
Leu	Gln	Gly	Leu	Ser	Gly	Ala	Gly	Gly	Val	Val	Ile	Ser	Lys	Ser	Ile
		115				120						125			
Ala	Ile	Asp	Leu	Tyr	Gln	Gly	Lys	Glu	Leu	Thr	Arg	Phe	Phe	Ala	Met
	130				135						140				
Leu	Ser	Ser	Val	Gln	Gly	Leu	Ala	Pro	Val	Cys	Ala	Pro	Val	Leu	Gly
145				150					155					160	
Gly	Ile	Leu	Leu	Gly	Ala	Met	Asp	Trp	Lys	Gly	Ile	Phe	Trp	Ile	Leu
			165					170						175	
Leu	Ala	Ile	Gly	Ile	Leu	Leu	Ile	Val	Ala	Leu	Ser	Ala	Phe	Lys	Glu
		180					185						190		
Ser	Leu	Glu	Ile	Lys	Lys	Arg	Gln	Lys	Gly	Asn	Val	Phe	Ser	Thr	Phe
	195					200						205			
Lys	Tyr	Tyr	Leu	Pro	Val	Leu	Arg	Asn	Arg	Gln	Phe	Met	Arg	Tyr	Val
	210				215						220				
Leu	Ile	Gln	Ala	Phe	Ala	Met	Gly	Val	Met	Phe	Thr	Tyr	Ile	Ala	Ala
225			230						235					240	
Ser	Pro	Phe	Ile	Phe	Gln	Asn	His	Phe	Gly	Thr	Ser	Pro	Phe	Ala	Tyr
			245					250					255		
Ser	Leu	Cys	Phe	Gly	Val	Asn	Ala	Leu	Gly	Ile	Met	Leu	Gly	Ser	Leu
		260					265						270		
Ala	Val	Ser	Arg	Phe	Lys	Asp	Ala	Thr	Ala	Ala	Leu	Arg	Phe	Gly	Val
	275					280						285			
Ala	Gly	Phe	Thr	Thr	Met	Ser	Leu	Pro	Val	Ala	Ala	Ala	Leu	Ile	Phe
	290				295						300				
Ser	Pro	Ser	Val	Trp	Ile	Val	Glu	Gly	Thr	Leu	Phe	Phe	Leu	Leu	Ala
305				310					315					320	
Phe	Leu	Gly	Leu	Ile	Leu	Pro	Gly	Ser	Thr	Thr	Leu	Ala	Leu	Asp	Met
			325					330						335	
Glu	Arg	Lys	Asn	Ser	Gly	Asn	Ala	Ser	Ala	Leu	Leu	Gly	Phe	Leu	Met
		340					345						350		
Phe	Val	Phe	Gly	Gly	Leu	Leu	Ser	Pro	Leu	Thr	Gly	Ile	Gly	Asn	Met

355 360 365
 Leu Tyr Ser Thr Gly Ile Ile Ile Val Ala Cys Cys Val Gly Thr Trp
 370 375 380
 Phe Phe Thr Tyr Lys Ala Thr Ser Ser Ala Arg
 385 390 395

<210> 8583
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 8583
 Leu Lys Asn Met Tyr Leu Cys Arg Gln Ile Lys Lys Arg Gln Pro Leu
 1 5 10 15
 Glu Leu Leu Ile Leu Tyr Leu Val Ile Val Asn Thr Val Ser Phe Val
 20 25 30
 Met Tyr Gly Ile Asp Lys Arg Asn Ala Ser Arg Lys Arg Trp Arg Thr
 35 40 45
 Pro Glu Val His Leu Leu Gly Ile Ala Val Ala Gly Gly Ser Leu Gly
 50 55 60
 Ala Trp Ala Gly Met Tyr Thr Phe Arg His Lys Thr Arg His Leu Lys
 65 70 75 80
 Phe Lys Tyr Gly Ile Pro Val Ile Gly Val Leu Gln Val Gly Met Ala
 85 90 95
 Ile Cys Leu Leu Ser Glu Phe Thr
 100 105

<210> 8584
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 8584
 Ser Ile Ser Ile Ile Lys Ile His Arg Glu Asp Ile Trp Ile Ser Ile
 1 5 10 15
 Lys Tyr Leu Arg His Leu Ile Glu Leu Leu Val Leu Ala Ser Lys Thr
 20 25 30
 Lys Asp Val Ser Phe Val Ile Arg Gln Lys Glu Glu Thr Gln Gly Asn
 35 40 45
 Thr Val Glu Ile Tyr Ser Ile Thr Leu Leu Lys Asp Ile His Thr Asn
 50 55 60
 Arg Thr Asp Tyr Ala Ile Leu Leu Asn Val Pro Asp Thr Val Ile Ala
 65 70 75 80
 Tyr

<210> 8585
 <211> 247
 <212> PRT
 <213> B.fragilis

<400> 8585
 Leu Arg Ile Leu Gly Ile Leu Arg Ser Leu Arg Arg Glu Glu Glu Val
 1 5 10 15
 Gln Ala Thr Ile Asp Thr Tyr Leu Tyr Leu Pro Glu Ile Arg Lys His
 20 25 30
 Glu Val Gln Arg Phe Ile Ala Asn Arg Gln Tyr Asp Ser Ala Ile Leu
 35 40 45
 Leu Leu Asp Glu Gly Ile Arg Ile Ala Gln Lys Asn Arg Tyr Leu Gly

50	55	60
Thr Ile Arg Asp Trp Leu Glu Gln Lys Leu Ser Ile Tyr Glu Glu Thr		
65	70	75
Asn Gln Thr Val Asn Ile Ile Asp Leu Cys Gln Gln Leu Phe Ile Ser		80
	85	90
Gly Asn Gly Asp Ile Thr Tyr Tyr His Lys Leu Lys Lys Leu Ile Ala		95
	100	105
Thr Asn Glu Trp Lys Lys Phe Leu Ser Gly Leu Met Lys Gln Ile Thr		110
	115	120
Phe Ser Gly His Gly Tyr Ser Gly Gln Cys Asn Lys Met Asp Ile Tyr		125
	130	135
Val Glu Glu Lys Asp Tyr Glu Asn Leu Leu Lys Met Leu Ser Asp His		140
145	150	155
His Ser Ser Leu Asp Met Leu Met His Tyr Ser His His Leu Asp Asn		160
	165	170
Asn Tyr Ser Thr Glu Ile Met Gln Leu Phe Thr Glu Gln Ile Asn Arg		175
	180	185
Tyr Ala Glu Met Asn Ile Gly Arg Asn His Tyr Glu Tyr Ile Glu Gln		190
	195	200
Val Leu Lys Glu Met Lys Lys Leu Lys Asp Gly Lys Lys Thr Val Glu		205
	210	215
Asp Ile Val Lys Lys Phe Arg Ile Ala Tyr Lys Arg Arg Pro Ala Met		220
225	230	235
Met Glu Thr Leu Ser Lys Phe		240
	245	

<210> 8586
 <211> 206
 <212> PRT
 <213> B.fragilis

<400> 8586

Ile Arg Thr Met Asp Leu Asp Phe Asp Lys Met Asn Gly Leu Val Pro		
1	5	10
Ala Ile Ile Gln Asp Asn Asp Thr Arg Lys Val Leu Met Leu Gly Phe		15
	20	25
Met Asn Lys Glu Ala Tyr Glu Lys Thr Val Glu Thr Gly Lys Val Thr		30
	35	40
Phe Phe Ser Arg Thr Lys Asn Arg Leu Trp Thr Lys Gly Glu Glu Ser		45
	50	55
Gly Asn Phe Leu Asn Val Val Ser Ile Lys Glu Asp Cys Asp Lys Asp		60
65	70	75
Thr Leu Leu Ile Gln Val Asn Pro Val Gly Pro Val Cys His Thr Gly		80
	85	90
Thr Asp Thr Cys Trp Gly Glu Lys Asn Glu Glu Pro Val Met Phe Leu		95
	100	105
Lys Leu Leu Gln Asp Phe Ile Asp Arg Arg His Glu Glu Met Pro Glu		110
	115	120
Lys Ser Tyr Thr Thr Ser Leu Phe Gln Ser Gly Ile Asn Lys Ile Ala		125
	130	135
Gln Lys Val Gly Glu Glu Ala Val Glu Thr Val Ile Glu Ala Thr Asn		140
145	150	155
Gly Thr Asp Asp Arg Leu Ile Tyr Glu Gly Ser Asp Leu Ile Tyr His		160
	165	170
Leu Ile Val Leu Leu Thr Ser Lys Gly Tyr Arg Ile Glu Asp Leu Ala		175
	180	185
Arg Glu Leu Gln Ile Arg His Ser Asp Ser Trp Thr Lys His		190
	195	200
		205

<210> 8587
 <211> 407
 <212> PRT
 <213> B.fragilis

<400> 8587

Pro	Leu	Tyr	Met	Thr	Thr	Phe	His	Ser	Ile	Asp	Glu	Leu	Leu	Lys	Met
1				5					10					15	
Met	Ser	Arg	Glu	Gln	Leu	Leu	Leu	Lys	Gln	Met	Phe	Gly	Lys	Arg	Lys
			20					25					30		
Gln	Gln	Ser	Phe	Arg	Arg	Glu	Tyr	Ala	Leu	Glu	Leu	Thr	Glu	Tyr	Lys
			35				40					45			
Leu	Gln	Arg	Ile	Gln	Ser	Leu	Ile	Asp	His	Gly	Val	Leu	Arg	Glu	Asn
	50					55					60				
Gly	Ser	Phe	Leu	Glu	Met	Glu	Asp	Ile	Tyr	Leu	His	Phe	Phe	Glu	Gln
65					70					75					80
Val	Leu	Glu	Ile	Asn	Glu	Glu	Ile	Asn	Thr	Ser	Phe	Val	Asn	Glu	His
				85					90					95	
Ile	Ser	Tyr	Leu	Lys	Asp	Thr	Ile	Ser	Tyr	Tyr	Gln	Gln	Glu	Asn	His
			100					105					110		
Glu	Lys	Arg	Lys	Thr	Thr	Tyr	Leu	Arg	Thr	Ile	Lys	Arg	Ile	Leu	Arg
			115				120						125		
Asn	Ile	Ala	Leu	Thr	Thr	Leu	Arg	Asn	Val	Ile	Asp	Leu	Lys	Arg	Asn
	130					135					140				
Ile	Asp	Ser	Thr	Phe	Lys	Asn	Glu	Pro	Asn	Tyr	Gln	Ile	Lys	Lys	Lys
145					150					155					160
Lys	Leu	Val	Arg	Leu	Asp	Glu	Lys	Arg	Arg	Asp	Ile	Glu	Ala	Leu	Ile
				165					170					175	
Arg	Val	Ser	Glu	Glu	Leu	Leu	Val	Thr	Glu	Glu	Asp	Arg	Phe	Phe	Arg
			180					185					190		
Arg	Val	Pro	Asp	Asp	Glu	Leu	Val	Leu	Val	Val	Ala	Asn	Val	Arg	Ile
		195				200						205			
Gln	Leu	Asn	Glu	Cys	Phe	His	Asn	Leu	Ile	Glu	Ile	Gln	Lys	Gln	Ile
	210					215						220			
Ile	Ser	Tyr	Leu	Asn	Arg	Ile	Glu	Tyr	Gln	Asn	Lys	Ile	Arg	Val	Lys
225					230					235					240
Ile	Arg	Gln	Leu	Lys	Tyr	Leu	Lys	Asp	Gln	Phe	Glu	Leu	Glu	Glu	Arg
				245					250					255	
Thr	Asp	Ile	Cys	Arg	Val	Leu	Met	Gln	Lys	Asp	Ser	Val	Trp	Phe	Glu
			260					265					270		
Pro	Ala	Pro	Ala	Tyr	Pro	Leu	Arg	Leu	Ser	Val	Glu	Tyr	Leu	Arg	Asn
		275					280					285			
Asp	Asp	Glu	Val	Leu	Glu	Ser	Ile	Arg	Lys	Val	Ile	Ala	Thr	Val	Gly
	290					295					300				
Lys	Arg	Ala	Ile	Leu	Ala	Arg	Asn	Val	Ala	Asp	Ser	Ile	Ala	Glu	Glu
305					310					315					320
Ser	Leu	Glu	Thr	His	Ile	Ser	Glu	Glu	Ala	Tyr	Ile	Asn	Leu	Glu	Glu
				325					330					335	
Val	Lys	Lys	Arg	Phe	Met	Gln	Ala	Asp	Gly	Asp	Leu	Phe	Ser	Phe	Val
			340					345					350		
Ala	Ala	Tyr	Pro	Phe	Thr	Gln	Glu	Val	Ser	Phe	Asp	Glu	Arg	Ile	Thr
		355				360						365			
Phe	Tyr	Cys	Gln	Ile	Val	Ser	Gln	Phe	Tyr	Glu	Glu	Leu	Arg	Ile	Thr
	370					375					380				
Asp	Glu	Tyr	Gly	Arg	Met	Asp	Gly	Val	Glu	Tyr	Ala	Leu	Ile	Tyr	Pro
385					390					395					400
Glu	Arg	Thr	Gly	Glu	Ile	Val									
				405											

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405

<210> 8588
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 8588
 Leu Asn Ile Ile Glu Thr Glu Leu Asn Asp Tyr Pro Gln Phe Lys Lys
 1 5 10 15
 Lys Val Ser Phe His Asp Lys Thr Thr Lys Leu Lys Lys Glu Leu Lys
 20 25 30
 Thr Leu Ile Lys Thr Trp Asp Lys Tyr Thr Lys Asp Leu Arg Ile Phe
 35 40 45
 Leu Phe Val Asp Asp Ile Asp Arg Tyr Ser Glu Lys Lys Ile Ile Gln
 50 55 60
 Ser Ile Asp Ser
 65

<210> 8589
 <211> 199
 <212> PRT
 <213> B.fragilis

<400> 8589
 Asn Ile Lys Met Lys Val Ala Val Ile Lys Tyr Asn Ala Gly Asn Ile
 1 5 10 15
 Arg Ser Val Asp Tyr Ala Leu Lys Arg Leu Gly Val Glu Ala Val Ile
 20 25 30
 Thr Ser Asp Lys Glu Val Leu Lys Ala Ala Asp Lys Val Ile Phe Pro
 35 40 45
 Gly Val Gly Glu Ala Glu Thr Thr Met Leu His Leu Lys Glu Ser Gly
 50 55 60
 Met Asp Arg Phe Ile Lys Glu Leu Arg Gln Pro Val Leu Gly Ile Cys
 65 70 75 80
 Leu Gly Met Gln Leu Met Cys Arg Phe Ser Glu Glu Gly Asn Val Asp
 85 90 95
 Cys Leu Gly Ile Phe Asp Thr Asp Val Lys Arg Phe Ala Pro Arg Lys
 100 105 110
 His Glu Glu Lys Val Pro His Met Gly Trp Asn Thr Ile Ser Cys Leu
 115 120 125
 Lys Ser Asp Leu Phe Lys Gly Phe Thr Arg Asp Glu Phe Val Tyr Phe
 130 135 140
 Val His Ser Tyr Tyr Val Pro Val Ser Glu Phe Thr Ala Ala Glu Thr
 145 150 155 160
 Asp Tyr Ile Arg Pro Phe Ser Ala Ala Leu His Lys Asp Asn Phe Tyr
 165 170 175
 Ala Thr Gln Phe His Pro Glu Lys Ser Gly Glu Ala Gly Glu Arg Ile
 180 185 190
 Ile Lys Asn Phe Leu Glu Leu
 195

<210> 8590
 <211> 390
 <212> PRT
 <213> B.fragilis

<400> 8590
 Leu Phe Lys Met Lys Thr Val Phe Pro Ile His Lys Phe Arg Glu Leu
 1 5 10 15
 Pro Thr Pro Phe Tyr Tyr Tyr Asp Thr Lys Val Leu Arg Asp Thr Leu

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

<400> 8591

Arg	Lys	Lys	Ile	Ile	Asn	Ile	His	Thr	Asn	Phe	Asn	Thr	Val	Thr	Lys
1				5					10					15	
Met	Lys	Val	Leu	Lys	Phe	Gly	Gly	Thr	Ser	Val	Gly	Ser	Ala	Gln	Arg
			20					25					30		
Met	Lys	Glu	Val	Ala	Lys	Leu	Ile	Thr	Asp	Gly	Glu	Arg	Lys	Ile	Val

35	40	45
Val Leu Ser Ala Met Ser Gly Thr Thr Asn Thr Leu Val Glu Ile Ser		
50	55	60
Asp Tyr Leu Tyr Lys Lys Asn Pro Glu Gly Ala Asn Glu Ile Ile Asn		
65	70	75
Lys Leu Glu Ala Lys Tyr Lys Gln His Val Asp Glu Leu Tyr Ala Thr		
85	90	95
Glu Glu Tyr Lys Gln Lys Gly Leu Glu Val Ile Lys Ser His Phe Asp		
100	105	110
Tyr Ile Arg Ser Tyr Thr Lys Asp Leu Phe Thr Leu Phe Glu Glu Lys		
115	120	125
Val Val Leu Ala Gln Gly Glu Leu Ile Ser Thr Ala Met Val Asn Tyr		
130	135	140
Tyr Leu Gln Glu Cys Gly Val Lys Ser Val Leu Leu Pro Ala Leu Glu		
145	150	155
Tyr Met Arg Thr Asp Lys Asn Ala Glu Pro Asp Pro Val Tyr Ile Lys		
165	170	175
Asp Lys Leu Gln Ala Gln Leu Asp Leu Tyr Pro Asp Ala Glu Ile Tyr		
180	185	190
Ile Thr Gln Gly Phe Ile Cys Arg Asn Ala Tyr Gly Glu Ile Asp Asn		
195	200	205
Leu Gln Arg Gly Gly Ser Asp Tyr Thr Ala Ser Leu Val Gly Ala Ala		
210	215	220
Ile His Ala Ser Glu Ile Gln Ile Trp Thr Asp Ile Asp Gly Met His		
225	230	235
Asn Asn Asp Pro Arg Ile Val Asp Lys Thr Ala Pro Val Arg Gln Leu		
245	250	255
His Phe Glu Glu Ala Ala Glu Leu Ala Tyr Phe Gly Ala Lys Ile Leu		
260	265	270
His Pro Thr Cys Ile Gln Pro Ala Lys Tyr Ala Asn Ile Pro Val Arg		
275	280	285
Leu Leu Asn Thr Met Asp Pro His Ala Pro Gly Thr Leu Ile Ser Asn		
290	295	300
Asp Thr Glu Lys Gly Lys Ile Lys Ala Val Ala Ala Lys Gly Asn Ile		
305	310	315
Thr Ala Ile Lys Ile Lys Ser Ser Arg Met Leu Leu Ala His Gly Phe		
325	330	335
Leu Arg Lys Val Phe Glu Ile Phe Glu Ser Tyr Gln Thr Ser Ile Asp		
340	345	350
Met Ile Cys Thr Ser Glu Val Glu Phe Pro Tyr Leu Ser Ile Thr Pro		
355	360	365
Ser Ile Ser Thr Arg Ser Trp Met Thr		
370	375	

<210> 8592

<211> 446

<212> PRT

<213> B.fragilis

<400> 8592

Lys Lys Glu Ile Gln Met Asn Ile Ala Ile Ser Gly Ala Ser Gly Phe		
1	5	10
Ile Gly Lys His Leu Thr Glu Tyr Leu Thr Glu Val Gly His Arg Val		
20	25	30
Ile Pro Leu Gly Arg Pro Met Phe Arg Glu Gly Thr Ser Gly His Leu		
35	40	45
Ile Gln Ala Leu Ser His Cys Asp Val Ile Ile Asn Leu Ala Gly Ala		
50	55	60
Pro Ile Gly Lys Arg Trp Thr Pro Glu Tyr Lys Lys Glu Leu Tyr Asp		

65		70		75		80
Ser Arg Ile Lys Val Thr His Cys Ile Ile Arg Ala Met Asp Ala Val						
	85			90		95
Lys Thr Lys Pro Arg Leu Met Ile Ser Ala Ser Ala Val Gly Tyr Tyr						
	100			105		110
Pro Glu Glu Gly Thr Phe Asp Glu Tyr Thr Asn Thr Arg Gly Ser Gly						
	115			120		125
Phe Leu Ala Glu Leu Cys Tyr Ala Trp Glu Lys Glu Ala Arg Arg Cys						
	130			135		140
Pro Ser Gln Thr Arg Leu Val Ile Thr Arg Phe Gly Ile Val Leu Ser						
	145			150		155
Pro Asp Gly Gly Ala Met Glu Gln Met Leu Arg Pro Leu Arg Ile Thr						
	165			170		175
Arg Val Ala Gly Val Ile Gly Pro Gly Thr Gln Pro Phe Pro Trp Ile						
	180			185		190
Ala Ile Gln Asp Leu Cys Arg Ala Met Glu Phe Ile Ile Ser His Glu						
	195			200		205
Glu Ala Ser Gly Val Phe Asn Leu Val Thr Pro Gln Gln Val Ser Gln						
	210			215		220
Tyr Ala Phe Thr Gln Ala Met Ala Ala Arg Tyr His Ala Trp Met Lys						
	225			230		235
Ala Val Val Pro Arg Trp Phe Phe Arg Met Arg Tyr Gly Glu Ala Ala						
	245			250		255
Ser Phe Leu Ala Ser Gly Gln Asn Val Arg Pro Thr Arg Leu Leu Glu						
	260			265		270
Ala Gly Phe Arg Phe Ala Lys Pro Thr Ile Glu Asp Phe Phe Glu Gly						
	275			280		285
Thr Asp His Ala Ala Val Asp Arg Leu Asp Leu His Arg Tyr Met Gly						
	290			295		300
Thr Trp Tyr Glu Ile Ala Arg Phe Asp His Arg Phe Glu Arg Gly Leu						
	305			310		315
Ser Glu Val Thr Ala Thr Tyr Thr Leu Met Pro Asp Gly Thr Val Arg						
	325			330		335
Val Glu Asn Arg Gly Cys Lys His Lys Lys Pro Tyr Asp Val Cys Lys						
	340			345		350
Thr Ala Glu Gly Arg Ala Lys Ile Pro Asp Pro Ser Gln Pro Gly Lys						
	355			360		365
Leu Lys Val Ser Phe Phe Leu Ser Phe Tyr Ser Asp Tyr Tyr Val Leu						
	370			375		380
Glu Leu Asp Gln Asp Glu Tyr Asn Tyr Ala Leu Ile Gly Ser Ser Ser						
	385			390		395
Asp Lys Tyr Leu Trp Ile Leu Ser Arg Ala Pro Ile Leu Pro Glu Glu						
	405			410		415
Ile Lys Lys Lys Leu Leu Asp Ala Ala Thr Arg Arg Gly Tyr Asp Val						
	420			425		430
Lys Lys Leu Ile Trp Val Glu Gln Arg Glu Lys Lys Ile Met						
	435			440		445

<210> 8593

<211> 320

<212> PRT

<213> B.fragilis

<400> 8593

Ser Gly Pro Ile Cys Arg Pro Glu Asp Ser Pro Tyr Leu Cys His Met			
1	5	10	15
Ala Glu Arg Asn Glu Leu His Lys Arg Asn Arg His Asn Gly Gln Tyr			
	20	25	30
Asp Phe Ser Arg Leu Thr Glu Glu Tyr Pro Pro Leu Lys Lys Phe Ile			

35	40	45
Val Leu Asn Ala Tyr Gly Thr Thr Ser Ile Asp Phe Phe Asn Pro Arg		
50	55	60
Ala Val Lys Ala Leu Asn Lys Ala Leu Leu Ile Ser Tyr Tyr Gly Ile		
65	70	75
Arg Tyr Trp Asp Ile Pro Lys Asn Tyr Leu Cys Pro Pro Ile Pro Gly		
85	90	95
Arg Ala Asp Tyr Ile His Tyr Ile Ala Asp Leu Ile Gln Pro Asp Ile		
100	105	110
Ser Asp Glu Ser Thr Gly Leu Lys Thr Ala Val Pro Asn Thr Arg Gln		
115	120	125
Tyr Arg Cys Leu Asp Ile Gly Val Gly Ala Asn Cys Ile Tyr Pro Ile		
130	135	140
Ile Gly Gln Thr Glu Tyr Gly Trp Thr Phe Val Gly Ser Asp Ile Asp		
145	150	155
Pro Val Ser Ile Asp Asn Ala Arg Lys Ile Val Thr Cys Asn Pro Ala		
165	170	175
Leu Ala His Lys Ile Glu Leu Arg Leu Gln Gln Asp Ser Arg Lys Ile		
180	185	190
Phe Glu Gly Ile Ile Ala Pro Asn Glu Tyr Phe Asp Val Thr Leu Cys		
195	200	205
Asn Pro Pro Phe His Ser Ser Lys Glu Glu Ala Glu Asp Gly Thr Leu		
210	215	220
Arg Lys Leu Ser Ser Leu Lys Gly Gln Lys Val Thr Lys Ala Arg Leu		
225	230	235
Asn Phe Gly Gly Asn Ala Asn Glu Leu Trp Cys Glu Gly Gly Glu Leu		
245	250	255
Arg Phe Leu Leu Thr Met Ile Glu Glu Ser Arg Asn Tyr Arg Lys Asn		
260	265	270
Cys Gly Trp Phe Thr Ser Leu Val Ser Lys Glu Lys Asn Leu Gly Lys		
275	280	285
Leu Thr Ala Lys Leu Lys Ser Thr Asp Ile Ala Glu His Arg Ile Ile		
290	295	300
Glu Met His Gln Gly Thr Lys Thr Ser Arg Ile Leu Ala Trp Arg Phe		
305	310	315
		320

<210> 8594

<211> 303

<212> PRT

<213> B.fragilis

<400> 8594

Gln Asp Arg Ile Thr Ala Leu Ser Val Lys Pro Ala Thr Phe Val Pro		
1	5	10
Glu Pro Asn Gly Thr Lys Thr Met Lys Ser Asp Thr Glu Glu Lys Tyr		
20	25	30
Leu Gln Gln Val Asn Arg Val Ile Asp Tyr Ile Asn Ser His Leu Asn		
35	40	45
Glu Pro Leu Arg Val Glu Thr Leu Ala Arg Glu Val Cys Leu Ser Glu		
50	55	60
Tyr His Phe His Arg Ile Met Arg Ala Tyr Leu His Glu Pro Leu Ala		
65	70	75
Thr Tyr Ile Ala Arg Gln Arg Val Glu Arg Ala Val Met Tyr Leu Gln		
85	90	95
Met Lys Asn Ile Arg Leu Ala Gln Val Ala Glu Met Val Gly Tyr Glu		
100	105	110
Thr Pro Gln Ser Leu Ser Lys Ala Phe Lys Gln Phe Phe Gly Ile Ser		
115	120	125
Pro Thr Ala Tyr Arg Lys Arg Arg Ala Glu Arg Tyr Glu Glu Phe Ser		

130	135	140
Thr Leu Lys Lys Glu Ser	Leu Lys Pro Glu Ile	Leu Thr Glu Pro Glu
145	150	155
Leu Lys Leu Val Tyr Ile	Arg Ile Ile Gly Arg Tyr	Gly Glu Glu Glu
165	170	175
Pro Tyr Ile Glu Ala Trp	Arg Lys Leu Arg Asp	Phe Leu Gln Ile Asn
180	185	190
Gly Leu Leu Thr Pro Ser	Thr Arg Trp Ile Gly	Ile Ser Phe Asp Asp
195	200	205
Pro Thr Val Thr Lys Thr	Glu Gln Cys Arg Phe	Tyr Ala Cys Ala Thr
210	215	220
Val Glu His Asp Val Ser	Pro Gln Gly Ala Phe	Gly Met Lys Thr Ile
225	230	235
Pro Gln Gly Arg Tyr Ala	Val Tyr Thr Leu Arg	Gly Ser Tyr Ser Gly
245	250	255
Leu Gln Glu Met Tyr Asp	Arg Ile Tyr Ser His	Pro Leu Pro Thr Ala
260	265	270
Phe Arg Asp Ala Thr Ser	Phe Glu Glu Tyr Leu	Asn Cys Glu Pro Asp
275	280	285
Met Glu Glu Lys Asp Tyr	Val Thr Arg Ile Tyr	Ile Pro Ile Glu
290	295	300

<210> 8595
 <211> 256
 <212> PRT
 <213> B.fragilis

<400> 8595

Arg Pro Leu Val Pro Ser	Leu Asn Asp Tyr Arg	Ile Gly Tyr Ser Leu
1	5	10
Phe Pro Glu Ile Ile Asp	Leu Ser Asn Tyr Lys	Trp Val Val Phe Tyr
20	25	30
Ser Gln Glu Leu Val Gly	Ser Ile Gly Lys Arg	Trp Phe Ser Cys Ser
35	40	45
Ile Glu Val Tyr Cys Cys	Leu Phe Cys Arg Val	Gly Gly Glu Tyr Ser
50	55	60
Phe Tyr Lys Leu Ile Phe	Val Phe Gln Tyr Phe	Gly His Leu Arg Leu
65	70	75
Tyr Ser Cys Arg Ile Tyr	Val Ser Thr Thr His	Lys Gly Lys Lys Lys
85	90	95
Asn Trp Asp Leu Ser Phe	Ile Ala Phe His Phe	Leu Phe Leu Leu Leu
100	105	110
Phe Leu His Pro Leu Ser	Ser Lys Pro Asn Thr	Ala Val Ile Met Lys
115	120	125
Ser Ile Glu Val Val Ala	Ala Val Ile Arg Ser	Gly Gly Lys Tyr Leu
130	135	140
Cys Val Gln Arg Gly Arg	Thr Lys Phe Ser Tyr	Thr Ser Phe Arg Tyr
145	150	155
Glu Phe Pro Gly Gly Lys	Val Glu Lys Gly Glu	Ser Leu Gln Glu Ala
165	170	175
Leu Gln Arg Glu Ile Met	Glu Glu Met Asp Tyr	Thr Ile Glu Val Gly
180	185	190
Glu Lys Leu Leu Thr Val	His His Ile Tyr Pro	Asp Phe Glu Ile Thr
195	200	205
Met His Ala Phe Leu Cys	His Pro Ile Gly Glu	Gln Tyr Val Leu Lys
210	215	220
Glu His Ile Ala Ala Gln	Trp Leu Phe Pro Gly	Glu Met Val Thr Leu
225	230	235
Asp Trp Ala Glu Ala Asp	Lys Pro Val Val Lys	Lys Ile Ser Glu Gln

<210> 8596
 <211> 319
 <212> PRT
 <213> B.fragilis

<400> 8596

Ala	Ile	Cys	Phe	Thr	Leu	Pro	Val	Ser	Leu	Ser	Trp	Leu	Ala	Val	Leu
1				5					10					15	
Gly	His	Gly	Ser	Leu	Leu	Ile	Lys	Gln	Pro	His	Pro	Pro	Ala	Ser	Arg
			20					25					30		
Leu	Leu	Gln	Asp	Lys	Ile	Trp	Lys	Ile	Gln	Leu	Ile	His	Phe	Pro	His
		35					40					45			
Ser	Val	Pro	Cys	Leu	Ile	Phe	Ile	Ser	Tyr	Leu	Cys	Leu	Lys	Pro	Leu
	50					55					60				
Asp	Met	Asn	Ser	Asp	Met	Lys	Arg	Ala	Ile	Ile	Ile	Gly	Ala	Thr	Ser
65					70					75					80
Gly	Ile	Gly	Arg	Glu	Val	Ala	Lys	Gln	Leu	Leu	Leu	Gln	Gly	Trp	Arg
				85					90					95	
Leu	Gly	Ile	Ala	Gly	Arg	Arg	Leu	Pro	Ala	Leu	Glu	Ala	Leu	Gln	Ser
			100					105						110	
Ser	Ala	Pro	Asp	Leu	Ile	Glu	Ile	Ala	Val	Leu	Asp	Val	Thr	Gln	Pro
		115					120					125			
Asp	Ala	Thr	Pro	Lys	Leu	Asn	Asn	Leu	Ile	Arg	Arg	Val	Gly	Gly	Met
	130					135						140			
Asp	Leu	Phe	Leu	Leu	Ser	Ser	Gly	Ile	Gly	Tyr	Gln	Asn	Met	Glu	Leu
145					150					155					160
Asn	Pro	Asp	Ile	Glu	Leu	Asp	Thr	Ala	Arg	Thr	Asn	Val	Glu	Gly	Phe
				165					170					175	
Met	Arg	Met	Ala	Asp	Thr	Ala	Phe	His	His	Phe	Arg	Glu	His	Gly	Gly
			180					185					190		
Gly	Gln	Leu	Ala	Val	Ile	Ser	Ser	Ile	Ala	Gly	Thr	Lys	Gly	Leu	Gly
		195					200					205			
Val	Ala	Pro	Ala	Tyr	Ser	Ala	Thr	Lys	Arg	Phe	Gln	Asn	Thr	Tyr	Ile
	210					215					220				
Asp	Ala	Leu	Glu	Gln	Leu	Ala	Gly	Met	Gln	Lys	Leu	Asn	Ile	Arg	Phe
225					230					235					240
Thr	Asp	Met	Arg	Pro	Gly	Phe	Val	Ser	Thr	Asp	Leu	Leu	Asn	Asp	Gly
				245					250					255	
Lys	His	Tyr	Pro	Leu	Leu	Met	Arg	Pro	Glu	Lys	Val	Ala	Lys	Arg	Ile
			260					265						270	
Val	Arg	Ala	Leu	Asn	Arg	Gln	Pro	Thr	Gly	Ser	Gly	Asp	Arg	Leu	Ala
		275					280					285			
Leu	Cys	His	Tyr	Arg	Leu	Phe	Met	Val	Asn	Asp	Ser	Ala	Pro	Asp	Met
	290					295					300				
Glu	Thr	Ile	Thr	His	Thr	Asp	Arg	Thr	Glu	Thr	Asp	Arg	Lys	Lys	
305					310					315					

<210> 8597
 <211> 572
 <212> PRT
 <213> B.fragilis

<400> 8597

Ile	Ser	Leu	Phe	Tyr	Met	Lys	Arg	Leu	Ser	Thr	Leu	Cys	Leu	Leu	Ala
1				5					10					15	
Ala	Gly	Phe	Phe	Ile	Pro	Gly	Gln	Ala	His	Gln	Ala	Arg	Pro	Thr	Val
			20					25					30		

Leu Asp Ser Val Tyr Ala Pro Leu Lys Val Ala Thr Pro Pro Ser Asp
 35 40 45
 Ala Tyr Ile Gly Leu Ser Leu Leu Asp Asn Gly Glu Ile Arg His Tyr
 50 55 60
 Asn Tyr Gly Glu Gln Ala Val Ala Gly Thr Val Tyr Leu Ser Ser Thr
 65 70 75 80
 Asp His Gly Leu Thr Trp Lys Arg Val Asn Arg Pro Lys Glu Met Pro
 85 90 95
 Phe Ala Asp Cys Gln Ser Pro Val Ser Lys Glu Tyr Ile Arg Leu Val
 100 105 110
 Asp Met Gly Ala Met Gly Val Tyr Cys Ile Arg Thr Ser Gly Gly Leu
 115 120 125
 Thr Gly Gly Arg Thr Leu Thr Lys Val Ala Asp Arg Asn Ser Ile Met
 130 135 140
 Ile Lys Pro Pro Val Phe Ile Arg Asn Gly Lys Arg Ile Val Val Ala
 145 150 155 160
 Ala His Gly Gly Val Thr Pro Lys Gly Cys Tyr Thr Tyr Phe Ser Asp
 165 170 175
 Asp Asp Gly Leu Thr Trp Lys Cys Ser Asn Thr Val Thr Ser Pro Asp
 180 185 190
 His Gln Gly Gly Gly Phe His Lys Gly Ile Arg Trp Asn His Gly Ala
 195 200 205
 Val Glu Pro Thr Val Val Glu Leu Lys Asp Gly Thr Leu Trp Met Leu
 210 215 220
 Met Arg Thr Ser Gln Asp Phe His Tyr Gln Ala Phe Ser Lys Asp Gly
 225 230 235 240
 Gly Gln Thr Trp Gly Glu Ser Glu Pro Ser Pro Phe Tyr Gly Thr Ile
 245 250 255
 Thr Met Pro Thr Leu Gly Arg Leu Ala Asp Gly Arg Leu Leu Leu Phe
 260 265 270
 Trp Cys Asn Thr Thr Pro Leu Pro Glu Lys Glu Gly Thr Asp Gly Val
 275 280 285
 Trp Asp Asp Val Phe Thr Asn Arg Asp Val Thr His Val Ala Val Ser
 290 295 300
 Asp Asp Asp Gly Lys Thr Trp Lys Gly Phe Arg Glu Leu Tyr Met Asn
 305 310 315 320
 Pro Met Arg Asn Asp Ile Asp Tyr Ala Val His Gly Gly Gly Ile Asp
 325 330 335
 Arg Gly Val His Gln Ala Gln Phe Val Glu Val Ala Pro Gly Lys Val
 340 345 350
 Leu Ala Ser Ile Gly Gln His Pro Leu His Arg Ala Met Met Met Phe
 355 360 365
 Asp Val Asn Trp Leu Tyr Glu Lys Ser Arg Phe Asn Asp Phe Thr Asp
 370 375 380
 Ser Leu Ser Gln Trp Ser Thr Phe Asn Tyr Met Asn Gly Ile Lys Gly
 385 390 395 400
 His Cys Ala Tyr Asn Arg Ile Gln Gly Cys Met Leu Glu Pro His Pro
 405 410 415
 Arg Lys Glu Gly Arg Gln Val Leu His Leu Thr Tyr Arg Pro Asp Ala
 420 425 430
 Ser Leu Val Ala Asp Thr Arg Gly Ala Val Trp Asn Phe Pro Ala Met
 435 440 445
 Lys Lys Gly Thr Phe Thr Val Ser Leu Arg Ile Pro Glu Gly Ser His
 450 455 460
 Ser Val Ser Leu Leu Leu Asn Asp Arg Trp Met Asn Pro Ser Asp Thr
 465 470 475 480
 Val Ala Arg Tyr Gln Ser Met Tyr Glu Leu Pro Leu Thr Arg Lys Gln
 485 490 495
 Leu Gly Val Lys Asp Asp Arg Trp His Glu Val Ser Leu Glu Trp Asp

500 505 510
 Leu Leu Gln Lys His Pro Gln Ala Arg Val Arg Val Asp Gly Arg Leu
 515 520 525
 Arg Pro Leu Arg Leu Pro Leu Lys Asn Lys Ser Gln Asn Gly Ile Ser
 530 535 540
 Tyr Val His Phe Ile Ala Pro Pro Ala Glu Ala Asn Pro Gly Val Tyr
 545 550 555 560
 Leu Glu Trp Val Arg Ala Glu Ala Asp Gly Ala Ile
 565 570

<210> 8598
 <211> 1242
 <212> PRT
 <213> B.fragilis

<400> 8598
 Trp Arg Leu Ser Ala Ile Trp Lys Ser Trp Ser Leu Ala Leu Thr Tyr
 1 5 10 15
 Gln Lys Arg Tyr Arg Met Arg Tyr Leu Asn Lys Ile Ile Phe Ile Asn
 20 25 30
 Ser Ala Arg Ile Gln Tyr Ala Glu Ile Gln Ile Asp Gly Asn Val His
 35 40 45
 Phe Ile Gly Thr Gln Gly Val Gly Lys Ser Thr Ala Leu Arg Ala Leu
 50 55 60
 Leu Phe Phe Tyr Asn Ala Asp Lys Thr Lys Leu Gly Ile Ser Lys Glu
 65 70 75 80
 Lys Lys Ser Phe Asp Glu Tyr Tyr Phe Pro Tyr Val Asn Ser Tyr Ile
 85 90 95
 Ile Tyr Glu Val Val Val Asp Asp Ala Ser Tyr Cys Val Leu Ala Phe
 100 105 110
 Arg Ser Gln Gly Arg Val Cys Phe Arg Phe Leu Gly Thr Gly Tyr Lys
 115 120 125
 Lys Glu Tyr Phe Ile Ser Pro Glu Gly Lys Ala Tyr Glu Glu Trp Asp
 130 135 140
 Gln Ile Arg Asp Ala Leu Gly Ser Phe Val Tyr Lys Ser Arg Arg Ile
 145 150 155 160
 Glu Thr Tyr Glu Glu Tyr Arg Asp Ile Ile Phe Gly Asn Gly Arg Gly
 165 170 175
 Leu Pro Pro Glu Phe Arg Lys Phe Ala Ile Thr Glu Ser Arg Gln Tyr
 180 185 190
 Gln Asn Ile Pro Arg Thr Ile Gln Asn Val Phe Leu Asn Ser Lys Leu
 195 200 205
 Asp Ala Glu Phe Ile Lys Gln Thr Ile Ile Met Ser Leu Asn Glu Glu
 210 215 220
 Asp Val Arg Ile Asp Leu Gly Gln Tyr Ala His His Leu Arg Arg Phe
 225 230 235 240
 Asp Glu Glu Val Thr Asp Ile Ser Lys Trp Phe Arg Lys Asn Lys Asn
 245 250 255
 Gly Glu Val Thr Val Arg Arg Gln Ala Asp Arg Val Ile Glu Leu Tyr
 260 265 270
 Arg Glu Met His Tyr Leu Glu Gln Gln Ala Arg Thr Leu Ala Gly Glu
 275 280 285
 Leu Asn Tyr Ala Phe Arg Thr Ala Arg Glu Val Leu Pro Ser Leu Gln
 290 295 300
 Lys Gln Lys Glu Glu Leu Lys Lys Glu Val Ala Lys Glu Lys Arg Gln
 305 310 315 320
 Leu Glu Glu Leu Ser Gly Lys Phe Gln Ser Glu Arg Asp Arg Leu Leu
 325 330 335
 Gly Val Val Lys Val Gln Asn Glu Asn Leu Lys Thr Ala Arg Glu Arg

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340 345 350
 Lys Glu Arg Tyr Glu Ser Gln Asp Ile His His Val Arg Glu Arg Val
 355 360 365
 Asn Ala Glu Ser Glu Ala Val Leu His Lys Gln Met Leu Glu Glu Gln
 370 375 380
 Leu Thr Met Leu Thr Ala Arg Phe Asp Asp Ile Asn Ser Gln Tyr Lys
 385 390 395 400
 Leu Leu Lys Glu Gln Ala Ala Ser Ala Phe Glu Arg Phe Arg Asn Gly
 405 410 415
 Lys Asn Ala Glu Leu Asn Thr Leu His Leu Arg Ala Ile Glu Arg Lys
 420 425 430
 Glu Ala Ile Arg Lys Glu Phe Asp Lys Ile Leu Lys Glu Val Arg Glu
 435 440 445
 Gln Glu Val Gly Lys Leu Thr Leu Leu Arg Glu Gln Thr Glu Lys Lys
 450 455 460
 Lys Glu Gly Ile Tyr Gln Leu Lys Met Glu Arg Glu Lys Cys Leu His
 465 470 475 480
 Arg Thr Leu His Glu Glu Glu Leu Gln Ala Cys Arg Thr Glu Arg Ala
 485 490 495
 Ala Leu Glu Lys Glu Asn His Glu Tyr Arg Leu Lys Gln Lys Glu Ala
 500 505 510
 Glu Gln Gln Met Glu Leu Val Arg Arg Arg Trp Glu Leu Asp Gln Thr
 515 520 525
 Ala Cys Glu Gln Gln Phe Thr Ala Arg Gln Lys Asp Ile Glu Gln Gln
 530 535 540
 Ile Thr Leu Ala Lys Glu Arg Val Ala Glu Ile Asp Arg Leu Leu Asp
 545 550 555 560
 Asn Arg Gln Gly Ser Phe Tyr Glu Trp Leu Ser Gln Asn Cys Gln Gly
 565 570 575
 Trp Glu Asp Thr Ile Gly Lys Val Val Asp Glu Lys Gln Val Leu Phe
 580 585 590
 Ser Lys Glu Leu Lys Pro Gln Ser Val Pro Asp Ala Gly Gln Asp Ser
 595 600 605
 Phe Tyr Gly Ile Lys Leu Asp Leu Ser Ala Ile Arg Lys Glu Val Lys
 610 615 620
 Ser Val Gln Glu Tyr Ala Ala Asp Gln Glu Ile Ala Gly Lys Glu Val
 625 630 635 640
 Ser Glu Trp Gln Gln Gln Leu Glu Lys Leu Gly Glu Glu Lys Glu Lys
 645 650 655
 Glu Leu Ala Leu Ile Arg Lys Arg His Gln Ala Thr Leu Ser Thr Cys
 660 665 670
 Lys Glu Asp Val Ala Gln Ser Thr Tyr Cys Met Glu Gln Asn Asp Lys
 675 680 685
 Arg Ile Arg Leu Leu Lys Ala Asp Glu Ile Arg Trp Glu Gln Lys Ala
 690 695 700
 Gly Glu Glu Lys Arg Val Leu Leu Glu Gln Leu Asp Lys Gln Leu Ala
 705 710 715 720
 Glu Ala Thr Arg Ser Leu Gln Gly Thr Val Ala Glu Leu Glu Gln Phe
 725 730 735
 Asn His Leu Leu Glu Thr Arg Val Arg Gln Lys Glu Lys Glu Arg Asn
 740 745 750
 Gln Arg Met Gln Glu Glu Asp Ala Leu Ile Arg Asn Lys Gln Glu Glu
 755 760 765
 Ile His Leu Ser Ile Ala Ser Glu Lys Gln Lys Thr Asp Glu Leu Leu
 770 775 780
 Ala Thr Met Asp Lys Asp Leu Leu His Glu Leu Ser Gly Lys Glu Trp
 785 790 795 800
 Ile Arg Ser Val Ser Leu Leu Leu Arg Asn Glu Val Ala Arg Thr Glu
 805 810 815

Gln Glu Leu Val Phe Ile Asp Gln His Arg Arg Leu Val Tyr Asp Tyr
 820 825 830
 Glu Lys Asp Lys Arg Glu Phe Phe Asp Arg Met Asp Glu Phe Arg Asn
 835 840 845
 Glu Lys Gln Leu Ala Glu Lys Glu Leu Glu Gly Glu Lys Glu Lys Phe
 850 855 860
 Arg Leu Lys Glu Glu Glu Leu Asn Leu Lys Met Thr Gly Leu Asn Lys
 865 870 875 880
 Gln Leu Ala Glu Thr Asn Thr Arg Leu Lys His Leu Asp Glu Asp Ile
 885 890 895
 Arg Glu Thr Glu Asn Phe Lys Thr Leu Asn Ile Cys Pro Pro Val Leu
 900 905 910
 Gln Thr Gly Val Glu Thr Glu Asn Ala Lys Arg Cys Lys Lys Val Ile
 915 920 925
 Glu Glu Leu Thr Gln Asn His Tyr Arg Gln Ile Glu Gln Glu Lys Asp
 930 935 940
 Phe Arg Glu Ala Val Gly Arg Phe Ser Gly Asn Phe Ser Glu Gln Asn
 945 950 955 960
 Thr Phe Asn Phe Arg Thr Arg Leu Thr Lys Arg Glu Glu Phe Met Thr
 965 970 975
 Phe Ala Ala Asp Leu Lys Glu Phe Ile Asp Asn Asp Lys Ile Ile Asp
 980 985 990
 Phe Glu Arg Arg Ser Asn Glu Ala Tyr Thr Asp Leu Ile His Arg Ile
 995 1000 1005
 Gly Lys Glu Thr Thr Asp Met Leu Ser Lys Glu Gly Leu Ile Arg Lys
 1010 1015 1020
 Thr Ile Ser Asp Ile Asn Ser Asp Phe Val Glu Arg Asn Phe Ala Gly
 1025 1030 1035 1040
 Val Ile Lys Ser Ile Ala Leu Gln Ile Val Pro Ser Gly Asn Arg Ile
 1045 1050 1055
 Met Gln His Phe Val Thr Ile Lys Glu Phe Cys Asp Arg Asn Gln Pro
 1060 1065 1070
 Gly Ala Pro Gly Met Phe Ser Leu Phe Gly Gln Glu Asp Phe Val Glu
 1075 1080 1085
 Arg Asn Arg Gln Ala Val Ser Leu Leu Gln Ser Leu Val Lys Glu Leu
 1090 1095 1100
 Ala Leu Asn Lys Glu Lys Glu Leu Thr Leu Ser Asp Thr Phe Glu Leu
 1105 1110 1115 1120
 Gln Phe Arg Ile Val Glu Asn Asp Asn Asp Ser Gly Trp Val Glu Lys
 1125 1130 1135
 Leu Ala Asn Val Gly Ser Asp Gly Thr Asp Ile Leu Val Lys Ala Met
 1140 1145 1150
 Ile Asn Ile Met Leu Leu Asn Val Phe Lys Glu Lys Ala Ser His Gln
 1155 1160 1165
 Phe Asn Asp Phe Lys Leu His Cys Met Met Asp Glu Ile Gly Lys Leu
 1170 1175 1180
 His Pro Asn Asn Ile Lys Gly Ile Leu Asp Phe Ala Asn Asn Arg Asn
 1185 1190 1195 1200
 Ile Ile Leu Val Asn Ser Ser Pro Thr Ser Tyr Arg Ala Ser Asp Tyr
 1205 1210 1215
 Lys Tyr Thr Tyr Ile Leu Asn Lys Asp Lys Arg Asn Ile Thr Ser Val
 1220 1225 1230
 Thr Arg Leu Ile Lys Gln Glu Val Arg Glu
 1235 1240

<210> 8599

<211> 68

<212> PRT

<213> B.fragilis

Asn	Arg	Val	Thr	Met	Arg	Lys	Glu	Asp	Lys	Asn	Thr	Ile	Ile	Glu	Gln
1				5					10					15	
Ile	Ala	Ala	Thr	Val	Gln	Glu	Tyr	Gly	His	Phe	Tyr	Leu	Val	Asp	Thr
			20					25					30		
Thr	Ala	Met	Asn	Ala	Ala	Ala	Thr	Ser	Glu	Leu	Arg	Arg	Ala	Cys	Phe
			35				40					45			
Lys	Ala	Asp	Ile	Lys	Leu	Met	Val	Val	Lys	Asn	Thr	Leu	Leu	His	Lys
	50					55					60				
Ala	Leu	Glu	Ser	Ile	Glu	Gly	Asp	Phe	Ser	Pro	Leu	Tyr	Asp	Ser	Leu
65					70					75					80
Lys	Gly	Thr	Thr	Ala	Val	Met	Phe	Cys	Asn	Val	Ala	Asn	Ala	Pro	Ala
				85					90					95	
Lys	Leu	Ile	Lys	Asp	Lys	Ser	Lys	Asp	Gly	Ile	Pro	Gly	Leu	Lys	Ala
			100					105					110		
Ala	Tyr	Ala	Glu	Glu	Ser	Phe	Tyr	Val	Gly	Ala	Asp	Gln	Leu	Asp	Ala
			115				120					125			
Leu	Val	Ala	Ile	Lys	Ser	Lys	Asn	Glu	Val	Ile	Ala	Asp	Ile	Val	Ala
	130					135						140			
Leu	Leu	Gln	Ser	Pro	Ala	Lys	Asn	Val	Ile	Ser	Ala	Leu	Gln	Ser	Gly

145 150 155 160
 Gly Asn Thr Leu His Gly Val Leu Lys Thr Leu Gly Glu Arg
 165 170

<210> 8602
 <211> 196
 <212> PRT
 <213> B.fragilis

<400> 8602
 Leu Ser Pro Tyr Trp Leu Gln Asn Ser Tyr Leu Cys Lys Ser Ala Ala
 1 5 10 15
 Glu Phe Glu Ile Ser Ile Lys Gln Gln Ser Met Ala Leu Ile Lys Ser
 20 25 30
 Val Arg Gly Phe Thr Pro Glu Phe Gly Glu Asn Cys Phe Leu Ala Asp
 35 40 45
 Asn Ala Thr Ile Ile Gly Asp Val Lys Met Gly Gln Asn Cys Ser Ile
 50 55 60
 Trp Phe Asn Thr Val Leu Arg Gly Asp Val Asn Ser Ile Arg Met Gly
 65 70 75 80
 Asp Gly Val Asn Ile Gln Asp Gly Ser Val Leu His Thr Leu Tyr Glu
 85 90 95
 Lys Ser Thr Ile Glu Ile Gly Asn Tyr Val Ser Val Gly His Asn Val
 100 105 110
 Thr Ile His Gly Ala Thr Val Lys Asp Tyr Ala Leu Ile Gly Met Gly
 115 120 125
 Ser Thr Leu Leu Asp His Ala Val Ile Gly Glu Gly Ala Ile Val Ala
 130 135 140
 Ala Gly Ser Leu Val Leu Ser Asn Thr Ile Ile Glu Pro Gly Ser Ile
 145 150 155 160
 Trp Gly Gly Val Pro Ala Lys Phe Ile Lys Lys Val Asp Pro Glu Gln
 165 170 175
 Ala Lys Glu Leu Asn Gln Lys Ile Ala His Asn Tyr Leu Met Tyr Ser
 180 185 190
 Asp Trp Tyr Lys
 195

<210> 8603
 <211> 593
 <212> PRT
 <213> B.fragilis

<400> 8603
 Cys Met Lys Gln Ser Ile Ser Glu Arg Ile His Ala Leu Arg Met Trp
 1 5 10 15
 Phe Lys Pro Asn Ile Gln Ala Phe Ile Ile Pro Ser Thr Asp Pro His
 20 25 30
 Leu Ser Glu Tyr Val Ala Pro His Trp Lys Ser Arg Glu Trp Ile Ser
 35 40 45
 Gly Phe Thr Gly Ser Ala Gly Thr Val Val Ile Thr Glu Lys Lys Ala
 50 55 60
 Gly Leu Trp Thr Asp Ser Arg Tyr Phe Leu Gln Ala Ala Glu Gln Leu
 65 70 75 80
 Gln Gly Ser Gly Ile Asp Leu Tyr Lys Glu Met Leu Pro Glu Thr Pro
 85 90 95
 Ser Ile Thr Lys Phe Leu Ser Asp Glu Leu Gln Pro Gly Glu Ser Val
 100 105 110
 Gly Ile Asp Gly Lys Met Phe Ser Val Glu Gln Val Glu Ser Met Gln
 115 120 125

Ala Glu Leu Ser Ala Lys Asn Ile Gln Ile Val Phe Cys Pro Asp Pro
 130 135 140
 Met Asp Glu Leu Trp Glu Asn Arg Pro Pro Met Pro Glu Ser Pro Ala
 145 150 155 160
 Phe Val Tyr Asp Ile Lys Tyr Ala Gly Lys Ser Cys Ser Glu Lys Ile
 165 170 175
 Ala Ala Ile Arg Thr Glu Leu Lys Lys Lys Ser Ala Glu Ser Val Met
 180 185 190
 Leu Ser Ala Leu Asp Glu Ile Ala Trp Thr Leu Asn Leu Arg Gly Asn
 195 200 205
 Asp Val His Cys Asn Pro Val Val Val Ser Tyr Leu Leu Ile Thr Glu
 210 215 220
 Lys Lys Ala Val Leu Phe Ile Ala Pro Glu Lys Val Thr Glu Glu Val
 225 230 235 240
 Arg Asn Tyr Leu Glu Lys Gln Gln Ile Glu Ile Gln Asn Tyr Ser Asp
 245 250 255
 Thr Glu Ile Tyr Leu Ser Asp Leu Asn Ser Ser Ser Ile Leu Met Asn
 260 265 270
 Pro Ala Lys Thr Asn Tyr Ser Val Phe Ser Ser Val Asn Pro Gln Cys
 275 280 285
 Arg Ile Ile Arg Gly Glu Ala Pro Val Ala Leu Leu Lys Ala Ile Arg
 290 295 300
 Asn Glu Gln Glu Ile Lys Gly Ile His Ala Ala Met Gln Arg Asp Gly
 305 310 315 320
 Val Ala Leu Val Lys Phe Leu Arg Trp Leu Glu Ser Ala Val Pro Ser
 325 330 335
 Gly Thr Glu Thr Glu Leu Ser Ile Asp Arg Lys Leu His Ala Phe Arg
 340 345 350
 Ala Thr Gln Asp Leu Tyr Val Gly Glu Ser Phe Asp Thr Ile Ala Gly
 355 360 365
 Tyr Lys Glu His Gly Ala Ile Val His Tyr Ser Ala Thr Glu Glu Ser
 370 375 380
 Asn Ala Thr Leu His Pro Lys Gly Phe Leu Leu Leu Asp Ser Gly Ala
 385 390 395 400
 Gln Tyr Leu Asp Gly Thr Thr Asp Ile Thr Arg Thr Ile Ala Leu Gly
 405 410 415
 Glu Leu Thr Thr Glu Glu Lys Thr Asp Tyr Thr Leu Val Leu Lys Gly
 420 425 430
 His Ile Ala Leu Ala Met Ala Val Phe Pro Ser Gly Thr Arg Gly Ala
 435 440 445
 Gln Leu Asp Val Leu Ala Arg Met Pro Leu Trp Ser His Lys Met Asn
 450 455 460
 Phe Leu His Gly Thr Gly His Gly Val Gly His Phe Leu Ser Val His
 465 470 475 480
 Glu Gly Pro Gln Ser Ile Arg Met Asn Glu Asn Pro Ile Val Leu Gln
 485 490 495
 Pro Gly Met Val Thr Ser Asn Glu Pro Gly Val Tyr Lys Gly Gly Ser
 500 505 510
 His Gly Ile Arg Thr Glu Asn Leu Thr Leu Val Cys Ser Ala Gly Glu
 515 520 525
 Gly Leu Phe Gly Glu Tyr Leu Lys Phe Glu Thr Ile Thr Leu Cys Pro
 530 535 540
 Ile Cys Lys Lys Gly Ile Ile Lys Glu Leu Leu Thr Ala Asp Glu Val
 545 550 555 560
 Asp Trp Leu Asn Asn Tyr His Gln Gln Val Tyr Glu Lys Leu Ser Pro
 565 570 575
 Lys Leu Asn Glu Glu Glu Lys Ala Trp Leu Lys Glu Ala Thr Ala Val
 580 585 590
 Ile

<210> 8604
 <211> 399
 <212> PRT
 <213> B.fragilis

<400> 8604

Ile	Thr	Ser	Lys	Ala	Met	Ala	Lys	Glu	Lys	Phe	Glu	Arg	Thr	Lys	Pro
1			5						10					15	
His	Val	Asn	Ile	Gly	Thr	Ile	Gly	His	Val	Asp	His	Gly	Lys	Thr	Thr
		20					25					30			
Leu	Thr	Ala	Ala	Ile	Thr	Thr	Val	Leu	Ala	Lys	Lys	Gly	Leu	Ser	Glu
	35					40					45				
Leu	Arg	Ser	Phe	Asp	Ser	Ile	Asp	Asn	Ala	Pro	Glu	Glu	Lys	Glu	Arg
	50				55					60					
Gly	Ile	Thr	Ile	Asn	Thr	Ser	His	Val	Glu	Tyr	Glu	Thr	Ala	Asn	Arg
65				70					75					80	
His	Tyr	Ala	His	Val	Asp	Cys	Pro	Gly	His	Ala	Asp	Tyr	Val	Lys	Asn
			85					90						95	
Met	Val	Thr	Gly	Ala	Ala	Gln	Met	Asp	Gly	Ala	Ile	Ile	Val	Val	Ala
			100					105					110		
Ala	Thr	Asp	Gly	Pro	Met	Pro	Gln	Thr	Arg	Glu	His	Ile	Leu	Leu	Ala
	115						120					125			
Arg	Gln	Val	Asn	Val	Pro	Lys	Leu	Val	Val	Phe	Met	Asn	Lys	Cys	Asp
	130					135				140					
Met	Val	Glu	Asp	Ala	Glu	Met	Leu	Glu	Leu	Val	Glu	Met	Glu	Met	Arg
145					150				155						160
Glu	Leu	Leu	Ser	Phe	Tyr	Asp	Phe	Asp	Gly	Asp	Asn	Thr	Pro	Ile	Ile
			165					170						175	
Gln	Gly	Ser	Ala	Leu	Gly	Ala	Leu	Asn	Gly	Val	Glu	Lys	Trp	Glu	Asp
		180						185					190		
Lys	Val	Met	Glu	Leu	Met	Glu	Ala	Val	Asp	Thr	Trp	Ile	Pro	Leu	Pro
		195					200					205			
Pro	Arg	Asp	Val	Asp	Lys	Pro	Phe	Leu	Met	Pro	Val	Glu	Asp	Val	Phe
	210					215					220				
Ser	Ile	Thr	Gly	Arg	Gly	Thr	Val	Ala	Thr	Gly	Arg	Ile	Glu	Thr	Gly
225					230					235					240
Val	Ile	His	Val	Gly	Asp	Glu	Ile	Glu	Ile	Leu	Gly	Leu	Gly	Glu	Asp
			245					250						255	
Lys	Lys	Ser	Val	Val	Thr	Gly	Val	Glu	Met	Phe	Arg	Lys	Leu	Leu	Asp
		260						265					270		
Gln	Gly	Glu	Ala	Gly	Asp	Asn	Val	Gly	Leu	Leu	Leu	Arg	Gly	Val	Asp
	275						280					285			
Lys	Asn	Glu	Ile	Lys	Arg	Gly	Met	Val	Leu	Cys	Lys	Pro	Gly	Gln	Ile
	290					295					300				
Lys	Pro	His	Ser	Lys	Phe	Lys	Ala	Glu	Val	Tyr	Ile	Leu	Lys	Lys	Glu
305					310					315					320
Glu	Gly	Gly	Arg	His	Thr	Pro	Phe	His	Asn	Lys	Tyr	Arg	Pro	Gln	Phe
			325					330						335	
Tyr	Leu	Arg	Thr	Met	Asp	Cys	Thr	Gly	Glu	Ile	Thr	Leu	Pro	Glu	Gly
		340						345					350		
Thr	Glu	Met	Val	Met	Pro	Gly	Asp	Asn	Val	Thr	Ile	Thr	Val	Glu	Leu
	355					360						365			
Ile	Tyr	Pro	Val	Ala	Leu	Asn	Ile	Gly	Leu	Arg	Phe	Ala	Ile	Arg	Glu
	370					375					380				
Gly	Gly	Arg	Thr	Val	Gly	Ala	Gly	Gln	Ile	Thr	Glu	Ile	Ile	Asp	
385					390					395					

<210> 8605
 <211> 151
 <212> PRT
 <213> B.fragilis

<400> 8605

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Ile Asn Lys Lys Met Ala Lys Glu Val Ala Gly Leu Ile Lys Leu Gln
1      5      10      15
Ile Lys Gly Gly Ala Ala Asn Pro Ser Pro Pro Val Gly Pro Ala Leu
      20      25      30
Gly Ser Lys Gly Ile Asn Ile Met Glu Phe Cys Lys Gln Phe Asn Ala
      35      40      45
Arg Thr Gln Asp Lys Ala Gly Lys Ile Leu Pro Val Ile Ile Thr Tyr
      50      55      60
Tyr Ala Asp Lys Ser Phe Asp Phe Val Ile Lys Thr Pro Pro Val Ala
65      70      75      80
Ile Gln Leu Leu Glu Val Ala Lys Val Lys Ser Gly Ser Ala Glu Pro
      85      90      95
Asn Arg Lys Lys Val Ala Glu Ile Thr Trp Glu Gln Val Arg Thr Ile
      100     105     110
Ala Gln Asp Lys Met Val Asp Leu Asn Cys Phe Thr Val Glu Ala Ala
      115     120     125
Met Arg Met Val Ala Gly Thr Ala Arg Ser Met Gly Ile Ala Val Lys
      130     135     140
Gly Glu Phe Pro Val Asn Asn
145      150

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<210> 8606
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 8606

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Ser Arg Ser Leu Arg Asn Ile Ser Thr Pro Val Thr Thr Asp Phe Leu
1      5      10      15
Ser Ser Pro Lys Pro Arg Ile Ser Ile Ser Ser Pro Thr Trp Ile Thr
      20      25      30
Pro Val Ser Ile Arg Pro Val Ala Thr Val Pro Arg Pro Val Ile Glu
      35      40      45
Asn Thr Ser Ser Thr Gly Ile Lys Lys Gly Leu Ser Thr Ser Arg Gly
      50      55      60
Gly Ser Gly Ile Gln Val Ser Thr Ala Ser Ile Ser Ser Ile Thr Leu
65      70      75      80
Ser Ser His Phe Ser Thr Pro Phe Asn Ala Pro Arg Ala Glu Pro
      85      90      95

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<210> 8607
 <211> 114
 <212> PRT
 <213> B.fragilis

<400> 8607

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Asn Tyr Arg Leu Lys Pro Asn Ile Asn Gln Phe Pro Val Val Ile Ser
1      5      10      15
Gly Thr Asp Tyr Val Gln Thr Gly Val Ala Gln Leu Val Glu His Arg
      20      25      30
Ser Pro Lys Pro Gly Val Gly Ser Ser Ser Leu Ser Ser Arg Ala Asn
      35      40      45
Ile Tyr Glu Met Lys Lys Val Val Ala Tyr Ile Lys Glu Ser Tyr Asp

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50 55 60
 Glu Leu Val His Lys Val Ser Trp Pro Thr Tyr Ser Glu Leu Thr Asn
 65 70 75 80
 Ser Ala Val Val Val Leu Tyr Ala Ser Leu Leu Ile Ala Leu Val Val
 85 90 95
 Phe Ala Met Asp Phe Cys Phe Gln Asn Phe Met Glu Lys Ile Ile Tyr
 100 105 110
 Pro His

<210> 8608
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 8608
 Asn Lys Ala Arg Trp Ser Ile Arg Val His Gln Ser Gly Ile Val His
 1 5 10 15
 Thr Ser Ile Gly Lys Val Ser Phe Thr Ala Glu Gln Ile Arg Asp Asn
 20 25 30
 Ala Lys Glu Phe Ile Ser Thr Leu Asn Lys Leu Lys Pro Thr Ala Ala
 35 40 45
 Lys Gly Thr Tyr Ile Lys Ser Ile Tyr Leu Ser Ser Thr Met Ser Ala
 50 55 60
 Gly Ile Lys Ile Asp Pro Lys Ser Val Glu Glu Ile
 65 70 75

<210> 8609
 <211> 410
 <212> PRT
 <213> B.fragilis

<400> 8609
 Gly Ser Gly Gly Met Phe Tyr Asp Leu Ala Ile Gly Ile Tyr Asp Leu
 1 5 10 15
 Leu Val His Leu Ala Ala Pro Phe Ser Arg Lys Pro Arg Lys Met Met
 20 25 30
 Lys Gly His Trp Val Val Tyr Asp Leu Leu Arg Gln Gln Val Glu Lys
 35 40 45
 Asp Glu Arg Tyr Ile Trp Phe His Ala Ala Ser Leu Gly Glu Phe Glu
 50 55 60
 Gln Gly Arg Pro Leu Ile Glu Ser Ile Arg Glu Arg Tyr Pro Asp Tyr
 65 70 75 80
 Lys Ile Leu Gln Thr Phe Phe Ser Pro Ser Gly Tyr Glu Val Arg Lys
 85 90 95
 Asn Tyr Arg Gly Ala Asp Ile Val Cys Tyr Leu Pro Phe Asp Lys Pro
 100 105 110
 Arg Asn Val Lys Lys Phe Leu Asp Ile Val Asn Pro Cys Met Ala Phe
 115 120 125
 Phe Ile Lys Tyr Glu Phe Trp Lys Asn Tyr Leu Asp Glu Leu His Lys
 130 135 140
 Arg Arg Ile Pro Val Tyr Ser Val Ser Ser Ile Phe Arg Lys Asp Gln
 145 150 155 160
 Ile Phe Phe Lys Trp Tyr Gly Gly Thr Tyr Arg Asn Val Leu Lys Asp
 165 170 175
 Phe Asp His Leu Phe Val Gln Asn Glu Ala Ser Lys Arg Phe Leu Ala
 180 185 190
 Lys Ile Gly Ile Thr Arg Val Thr Val Val Gly Asp Thr Arg Phe Asp
 195 200 205

Arg Val Leu Gln Ile Arg Glu Gln Ala Lys Glu Leu Pro Leu Val Glu
 210 215 220
 Gln Phe Lys Asn Gly Ala Phe Thr Phe Val Ala Gly Ser Ser Trp Gly
 225 230 235 240
 Pro Asp Glu Asp Leu Phe Ile Glu Tyr Phe Asn Ser His Pro Glu Met
 245 250 255
 Lys Leu Ile Ile Ala Pro His Val Ile Asp Glu Asn His Leu Val Glu
 260 265 270
 Ile Ile Gly Lys Leu Lys Arg Pro Ser Val Arg Tyr Thr Arg Ala Asp
 275 280 285
 Glu Lys Asn Val Arg Lys Ala Asp Cys Leu Ile Ile Asp Cys Phe Gly
 290 295 300
 Leu Leu Ser Ser Ile Tyr Arg Tyr Gly Glu Ile Ala Tyr Ile Gly Gly
 305 310 315 320
 Gly Phe Gly Val Gly Ile His Asn Thr Leu Glu Ala Ala Val Tyr Gly
 325 330 335
 Ile Pro Val Ile Phe Gly Pro Lys Tyr Gln Lys Phe Met Glu Ala Met
 340 345 350
 Gln Leu Ile Glu Ala Gly Gly Ala Tyr Ser Ile Lys Asp Tyr Asn Glu
 355 360 365
 Leu Lys Ile Leu Leu Asp Arg Leu Leu Thr Asp Glu Ala Phe Leu Lys
 370 375 380
 Lys Thr Gly Thr Asn Ala Gly Asn Tyr Val Ile Gly Asn Ser Gly Ala
 385 390 395 400
 Thr Glu Lys Val Leu His Met Ile Asn Phe
 405 410

<210> 8610

<211> 308

<212> PRT

<213> B.fragilis

<400> 8610

Ile Leu Phe Ile His Ser Leu Gln Asn Tyr Arg Cys Ser Asp Ile Met
 1 5 10 15
 Leu Thr Asp Ser Phe Leu Asp Tyr Leu Arg Tyr Glu Arg Asn Tyr Ser
 20 25 30
 Glu Lys Thr Val Leu Ala Tyr Gly Glu Asp Ile Ser Gln Leu Arg Glu
 35 40 45
 Phe Ala Gln Glu Arg Met Glu Lys Phe Asp Pro Ala Glu Val Lys Pro
 50 55 60
 Glu Leu Val Arg Glu Trp Ile Val Ser Leu Met Asp Gln Gly Tyr Thr
 65 70 75 80
 Ser Thr Ser Val Asn Arg Lys Leu Ser Ser Leu Arg Ser Phe Tyr Lys
 85 90 95
 Tyr Leu Leu Arg Gln Gly Glu Val Ser Val Asp Pro Leu Arg Lys Ile
 100 105 110
 Thr Gly Pro Lys Asn Lys Lys Pro Leu Pro Ser Phe Leu Lys Glu Ser
 115 120 125
 Glu Met Asn Lys Leu Leu Asp Asp Thr Asp Phe Gly Glu Gly Phe Lys
 130 135 140
 Gly Cys Arg Asp Arg Leu Ile Ile Glu Met Phe Tyr Ala Thr Gly Met
 145 150 155 160
 Arg Leu Ser Glu Leu Ile Gly Leu Asp Asp Lys Asp Val Asp Phe Ser
 165 170 175
 Ala Ser Leu Leu Lys Val Thr Gly Lys Arg Asn Lys Gln Arg Leu Ile
 180 185 190
 Pro Phe Gly Asp Glu Leu Lys Glu Thr Met Leu Glu Tyr Val Asp Ile
 195 200 205

Arg Asn Glu Met Ile Ser Gly Arg Ser Asp Ala Phe Phe Val Arg Glu
 210 215 220
 Asn Gly Glu Arg Leu Tyr Lys Asn Leu Val Tyr Asn Leu Val Lys Arg
 225 230 235 240
 Asn Leu Ser Lys Val Val Thr Leu Lys Lys Arg Ser Pro His Val Leu
 245 250 255
 Arg His Thr Phe Ala Thr Thr Met Leu Asn Asn Asp Ala Glu Leu Gly
 260 265 270
 Ala Val Lys Glu Leu Leu Gly His Ser Ser Leu Ala Thr Thr Glu Ile
 275 280 285
 Tyr Thr His Thr Thr Phe Glu Leu Lys Lys Val Tyr Lys Gln Ala
 290 295 300
 His Pro Arg Ala
 305

<210> 8611
 <211> 190
 <212> PRT
 <213> B.fragilis

<400> 8611

Phe Ile His Ile Lys Lys Arg Gly Ile Thr Met Ser Glu Ile Glu Lys
 1 5 10 15
 Lys Trp Tyr Val Leu Arg Ala Ile Ser Gly Lys Glu Ala Lys Val Lys
 20 25 30
 Glu Tyr Leu Glu Ala Asp Ile Lys Asn Ser Asp Leu Gly Glu Tyr Val
 35 40 45
 Ser Gln Val Leu Ile Pro Thr Glu Lys Val Tyr Gln Val Arg Asn Gly
 50 55 60
 Lys Lys Ile Val Lys Glu Arg Ser Tyr Leu Pro Gly Tyr Val Leu Val
 65 70 75 80
 Glu Ala Ala Leu Val Gly Glu Val Ser His His Leu Arg Asn Thr Pro
 85 90 95
 Asn Val Ile Gly Phe Leu Gly Gly Ser Asp Lys Pro Val Pro Leu Arg
 100 105 110
 Gln Ser Glu Val Asn Arg Ile Leu Gly Thr Val Asp Glu Leu Gln Glu
 115 120 125
 Thr Gly Glu Asp Leu Asn Val Pro Tyr Ile Val Gly Glu Thr Val Lys
 130 135 140
 Val Thr Phe Gly Pro Phe Ser Gly Phe Ser Gly Ile Ile Glu Glu Val
 145 150 155 160
 Asn Ser Glu Lys Lys Lys Leu Lys Val Met Val Lys Ile Phe Gly Arg
 165 170 175
 Lys Thr Pro Leu Glu Leu Gly Phe Met Gln Val Glu Lys Glu
 180 185 190

<210> 8612
 <211> 180
 <212> PRT
 <213> B.fragilis

<400> 8612

Thr Ser Ile Val Met Gly Lys Leu Thr Lys Asn Gln Lys Leu Ala Ala
 1 5 10 15
 Gly Lys Ile Glu Ala Gly Lys Ala Tyr Ser Leu Lys Glu Ala Ala Ser
 20 25 30
 Leu Val Lys Glu Ile Thr Phe Thr Lys Phe Asp Ala Ser Leu Asp Ile
 35 40 45
 Asp Val Arg Leu Gly Val Asp Pro Arg Lys Ala Asn Gln Met Val Arg

50 55 60
 Gly Val Val Ser Leu Pro His Gly Thr Gly Lys Gln Val Arg Val Leu
 65 70 75 80
 Val Leu Cys Thr Pro Asp Ala Glu Ala Ala Lys Glu Ala Gly Ala
 85 90 95
 Asp Tyr Val Gly Leu Asp Glu Tyr Ile Glu Lys Ile Lys Gly Gly Trp
 100 105 110
 Thr Asp Ile Asp Val Ile Ile Thr Met Pro Ser Ile Met Gly Lys Ile
 115 120 125
 Gly Ala Leu Gly Arg Val Leu Gly Pro Arg Gly Leu Met Pro Asn Pro
 130 135 140
 Lys Ser Gly Thr Val Thr Met Asp Val Ala Lys Ala Val Arg Glu Val
 145 150 155 160
 Lys Gln Gly Lys Met Val Tyr Gln Ser Ala Ser Lys Arg Tyr Cys Ser
 165 170 175
 Tyr Phe Asn Trp
 180

<210> 8613
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 8613
 Ile Lys Lys Val Cys Val Ile Leu Arg Arg Asn Leu Thr Ala Glu Ile
 1 5 10 15
 Leu Asn His Asn Ile Phe Asn Asn Asn Lys Met Ile Val Val Pro Val
 20 25 30
 Lys Glu Gly Glu Asn Ile Glu Lys Ala Leu Lys Lys Phe Lys Arg Lys
 35 40 45
 Phe Glu Lys Thr Gly Ile Val Lys Glu Leu Arg Ser Arg Gln Gln Phe
 50 55 60
 Asp Lys Pro Ser Val Thr Lys Arg Leu Lys Lys Glu Arg Ala Val Tyr
 65 70 75 80
 Val Gln Lys Leu Gln Gln Val Glu Asp
 85

<210> 8614
 <211> 138
 <212> PRT
 <213> B.fragilis

<400> 8614
 His Ile Leu Phe Ser Lys Leu Asn Ile Lys Ile Ile Gln Lys Met Ala
 1 5 10 15
 Asp Leu Lys Ala Phe Ala Glu Gln Leu Val Asn Leu Thr Val Lys Glu
 20 25 30
 Val Asn Glu Leu Ala Thr Ile Leu Lys Glu Glu Tyr Gly Ile Glu Pro
 35 40 45
 Ala Ala Ala Ala Val Ala Val Ala Ala Gly Pro Ala Ala Gly Ala Ala
 50 55 60
 Ala Ala Glu Glu Lys Ser Ser Phe Asp Val Val Leu Lys Ser Ala Gly
 65 70 75 80
 Ala Ala Lys Leu Gln Val Val Lys Ala Val Lys Glu Ala Cys Gly Leu
 85 90 95
 Gly Leu Lys Glu Ala Lys Asp Met Val Asp Gly Ala Pro Ser Val Val
 100 105 110
 Lys Glu Gly Leu Ala Lys Asp Glu Ala Glu Ser Leu Lys Lys Thr Leu
 115 120 125

Glu Glu Ala Gly Ala Glu Val Glu Leu Lys
 130 135

<210> 8615
 <211> 957
 <212> PRT
 <213> B.fragilis

<400> 8615

Gln	Met	Ser	Ser	Asn	Thr	Val	Asn	Gln	Arg	Val	Asn	Phe	Ala	Ser	Thr
1				5					10					15	
Lys	Asn	Pro	Leu	Glu	Tyr	Pro	Asp	Phe	Leu	Glu	Val	Gln	Leu	Lys	Ser
			20					25					30		
Phe	Gln	Asp	Phe	Leu	Gln	Leu	Asp	Thr	Pro	Pro	Glu	Lys	Arg	Lys	Lys
		35					40					45			
Glu	Gly	Leu	Tyr	Lys	Val	Phe	Ala	Glu	Asn	Phe	Pro	Ile	Ala	Asp	Thr
	50					55					60				
Arg	Asn	Asn	Phe	Val	Leu	Glu	Phe	Leu	Asp	Tyr	Tyr	Ile	Asp	Pro	Pro
65					70					75					80
Arg	Tyr	Thr	Ile	Asp	Asp	Cys	Ile	Glu	Arg	Gly	Leu	Thr	Tyr	Ser	Val
				85					90					95	
Pro	Leu	Lys	Ala	Lys	Leu	Lys	Leu	Tyr	Cys	Thr	Asp	Pro	Asp	His	Glu
			100					105					110		
Asp	Phe	Asp	Thr	Val	Ile	Gln	Asp	Val	Phe	Leu	Gly	Pro	Ile	Pro	Tyr
		115					120					125			
Met	Thr	Asp	Lys	Ala	Thr	Phe	Val	Ile	Asn	Gly	Ala	Glu	Arg	Val	Val
	130					135					140				
Val	Ser	Gln	Leu	His	Arg	Ser	Pro	Gly	Val	Phe	Phe	Gly	Gln	Ser	Val
145					150					155					160
His	Ala	Asn	Gly	Thr	Lys	Leu	Tyr	Ser	Ala	Arg	Ile	Ile	Pro	Phe	Lys
				165					170					175	
Gly	Ser	Trp	Ile	Glu	Phe	Ala	Thr	Asp	Ile	Asn	Asn	Val	Met	Tyr	Ala
			180					185					190		
Tyr	Ile	Asp	Arg	Lys	Lys	Lys	Leu	Pro	Val	Thr	Thr	Leu	Leu	Arg	Ala
		195					200					205			
Ile	Gly	Phe	Glu	Asn	Asp	Lys	Asp	Ile	Leu	Glu	Ile	Phe	Asn	Leu	Ala
	210					215					220				
Glu	Asp	Val	Lys	Val	Asn	Lys	Thr	Asn	Leu	Lys	Lys	Val	Val	Gly	Arg
225					230					235					240
Lys	Leu	Ala	Ala	Arg	Val	Leu	Lys	Thr	Trp	Ile	Glu	Asp	Phe	Val	Asp
				245					250					255	
Glu	Asp	Thr	Gly	Glu	Val	Val	Ser	Ile	Glu	Arg	Asn	Glu	Val	Ile	Ile
			260					265					270		
Asp	Arg	Glu	Thr	Val	Ile	Glu	Pro	Glu	His	Ile	Asp	Glu	Ile	Ile	Asp
		275					280					285			
Ser	Gly	Val	Gln	Asn	Ile	Leu	Ile	His	Lys	Glu	Glu	Pro	Asn	Gln	Ser
	290					295						300			
Asp	Tyr	Ser	Ile	Ile	Tyr	Asn	Thr	Leu	Gln	Lys	Asp	Pro	Ser	Asn	Ser
305					310					315					320
Glu	Lys	Glu	Ala	Val	Leu	Tyr	Ile	Tyr	Arg	Gln	Leu	Arg	Asn	Ala	Asp
				325					330					335	
Pro	Ala	Asp	Asp	Ala	Ser	Ala	Arg	Glu	Val	Ile	Asn	Asn	Leu	Phe	Phe
			340					345					350		
Ser	Glu	Lys	Arg	Tyr	Asp	Leu	Gly	Asp	Val	Gly	Arg	Tyr	Arg	Ile	Asn
		355					360					365			
Lys	Lys	Leu	Asn	Leu	Thr	Thr	Asp	Met	Asp	Val	Arg	Val	Leu	Thr	Lys
	370					375					380				
Glu	Asp	Ile	Ile	Glu	Ile	Ile	Lys	Tyr	Leu	Ile	Glu	Leu	Ile	Asn	Ser
385					390					395					400

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Lys Ala Asp Val Asp Asp Ile Asp His Leu Ser Asn Arg Arg Val Arg
 405 410 415
 Thr Val Gly Glu Gln Leu Ser Asn Gln Phe Ala Val Gly Leu Ala Arg
 420 425 430
 Met Ser Arg Thr Ile Arg Glu Arg Met Asn Val Arg Asp Asn Glu Val
 435 440 445
 Phe Thr Pro Ile Asp Leu Ile Asn Ala Lys Thr Ile Ser Ser Val Ile
 450 455 460
 Asn Ser Phe Phe Gly Thr Asn Ala Leu Ser Gln Phe Met Asp Gln Thr
 465 470 475 480
 Asn Pro Leu Ala Glu Ile Thr His Lys Arg Arg Met Ser Ala Leu Gly
 485 490 495
 Pro Gly Gly Leu Ser Arg Glu Arg Ala Gly Phe Glu Val Arg Asp Val
 500 505 510
 His Tyr Thr His Tyr Gly Arg Leu Cys Pro Ile Glu Thr Pro Glu Gly
 515 520 525
 Pro Asn Ile Gly Leu Ile Ser Ser Leu Cys Val Phe Ala Lys Ile Asn
 530 535 540
 Asp Leu Gly Phe Ile Glu Thr Pro Tyr Arg Lys Val Asp Asn Gly Lys
 545 550 555 560
 Val Asp Leu Ser Glu Asn Gly Leu Val Tyr Leu Thr Ala Glu Glu Glu
 565 570 575
 Glu Ala Lys Ile Ile Ala Gln Gly Asn Ala Pro Leu Asn Asp Asp Gly
 580 585 590
 Thr Phe Ile Arg Asn Lys Val Lys Ser Arg Gln Asp Ala Asp Tyr Pro
 595 600 605
 Val Val Glu Pro Ser Glu Val Glu Leu Met Asp Val Ala Pro Gln Gln
 610 615 620
 Ile Ala Ser Ile Ala Ala Ser Leu Ile Pro Phe Leu Glu His Asp Asp
 625 630 635 640
 Ala Asn Arg Ala Leu Met Gly Ser Asn Met Met Arg Gln Ala Val Pro
 645 650 655
 Leu Leu Arg Ser Glu Ala Pro Ile Val Gly Thr Gly Ile Glu Arg Gln
 660 665 670
 Leu Val Arg Asp Ser Arg Thr Gln Ile Ala Ala Glu Gly Asp Gly Val
 675 680 685
 Ile Asp Phe Val Asp Ala Thr Thr Ile Arg Ile Leu Tyr Asp Arg Thr
 690 695 700
 Glu Asp Glu Glu Phe Val Ser Phe Glu Pro Ala Leu Lys Glu Tyr Arg
 705 710 715 720
 Ile Pro Lys Phe Arg Lys Thr Asn Gln Asn Met Thr Ile Asp Leu Arg
 725 730 735
 Pro Thr Cys Asn Lys Gly Asp Arg Val Thr Lys Gly Gln Ile Leu Thr
 740 745 750
 Glu Gly Tyr Ser Thr Glu Asn Gly Glu Leu Ala Leu Gly Lys Asn Leu
 755 760 765
 Leu Val Ala Tyr Met Pro Trp Lys Gly Tyr Asn Tyr Glu Asp Ala Ile
 770 775 780
 Val Leu Asn Glu Arg Val Val Arg Glu Asp Leu Leu Thr Ser Val His
 785 790 795 800
 Val Glu Glu Tyr Ser Leu Glu Val Arg Glu Thr Lys Arg Gly Met Glu
 805 810 815
 Glu Leu Thr Ser Asp Ile Pro Asn Val Ser Glu Glu Ala Thr Lys Asp
 820 825 830
 Leu Asp Glu Asn Gly Ile Val Arg Val Gly Ala Arg Ile Gln Pro Gly
 835 840 845
 Asp Ile Leu Ile Gly Lys Ile Thr Pro Lys Gly Glu Ser Asp Pro Ser
 850 855 860
 Pro Glu Glu Lys Leu Leu Arg Ala Ile Phe Gly Asp Lys Ala Gly Asp

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865		870		875		880									
Val	Lys	Asp	Ala	Ser	Leu	Lys	Ala	Ser	Pro	Ser	Leu	Lys	Gly	Val	Ile
		885		890		895									
Ile	Asp	Lys	Lys	Leu	Phe	Ser	Arg	Val	Ile	Lys	Asn	Arg	Ser	Ser	Lys
		900		905									910		
Leu	Ala	Asp	Lys	Ala	Leu	Leu	Pro	Lys	Ile	Asp	Asp	Glu	Phe	Glu	Ser
		915		920								925			
Lys	Val	Ala	Asp	Leu	Lys	Arg	Ile	Leu	Val	Lys	Lys	Leu	Ser	Gly	His
		930		935							940				
His	Arg	Gly	Ser	Gln	Glu	Pro	Gly	Ser	Gln	Trp	Ala	Gly			
945				950						955					

<210> 8616
 <211> 595
 <212> PRT
 <213> B.fragilis

<400> 8616

Lys	Met	Lys	Thr	Ile	Asn	Lys	Leu	Phe	Lys	Gly	Ile	Phe	Phe	Cys	Thr
1				5					10					15	
Leu	Val	Ser	Val	Ser	Val	Ser	Ser	Cys	Asp	Leu	Glu	Val	Glu	Pro	Pro
			20					25					30		
Ala	Asn	Ile	Ala	Ala	Glu	Thr	Tyr	Trp	Thr	Ser	Glu	Lys	Asp	Ala	Trp
			35				40					45			
Tyr	Asn	Leu	Asn	Ser	Ile	Tyr	Ser	Ala	Ala	Ile	Pro	Gly	Ile	Gly	Ile
		50				55					60				
Tyr	Gly	Asp	Ala	Tyr	Ser	Asp	Asp	Val	Tyr	Cys	Gln	Tyr	Ala	His	Glu
65				70						75					80
Ser	Asn	Ala	Lys	Ile	Phe	Gln	Gln	Asp	Gly	Phe	Ser	Pro	Leu	Tyr	Asp
				85					90					95	
Glu	Gly	Trp	Asn	Phe	Glu	Thr	Ile	Arg	Lys	Glu	Asn	Leu	Phe	Leu	Gln
			100					105					110		
Lys	Val	Gly	Asn	Cys	Glu	Met	Asp	Glu	Ser	Leu	Arg	Glu	Arg	Phe	Lys
			115				120					125			
Ala	Glu	Val	Arg	Ala	Met	Arg	Ala	Trp	Thr	Tyr	Leu	Gly	Met	Thr	Met
			130				135					140			
Thr	Phe	Gly	Lys	Val	Pro	Leu	Ile	Thr	Glu	Val	Leu	Asp	Tyr	Asn	Ser
145				150							155				160
Pro	Asn	Ile	Pro	Arg	Asp	Glu	Val	Ser	Val	Ile	Arg	Asp	Phe	Ile	Met
				165						170				175	
Lys	Glu	Leu	Thr	Glu	Ala	Ala	Ala	Ile	Leu	Pro	Glu	Lys	Tyr	Ala	Gly
			180					185					190		
Gly	Tyr	Pro	Asn	Glu	Lys	Gly	Arg	Ile	Thr	Lys	Tyr	Ala	Cys	Leu	Ser
			195				200					205			
Leu	Lys	Ala	Arg	Ala	Ala	Leu	Tyr	Phe	Gly	Asp	Tyr	Ala	Leu	Ala	Glu
			210				215				220				
Ser	Thr	Ala	Lys	Glu	Val	Met	Asp	Lys	Gly	Gly	Phe	Ser	Leu	Phe	Lys
225				230						235					240
Ile	Ser	Ser	Leu	Ser	Asp	Ala	Gln	Lys	Lys	Glu	Ala	Glu	Glu	Met	Ser
				245					250					255	
Leu	Tyr	Ile	Asp	Phe	Ala	Glu	Lys	Gly	Ile	Asp	Lys	Asp	Glu	Phe	Val
			260					265					270		
Lys	Gly	Met	Phe	Asn	Tyr	Glu	Ala	Leu	Trp	His	Thr	Glu	Asn	Ala	Asn
			275					280				285			
Pro	Asp	Asn	Pro	Glu	Tyr	Ile	Met	Thr	Arg	Gln	Tyr	Ala	Ala	Ser	Ser
			290				295				300				
Trp	Asp	Tyr	Gln	Asp	Met	Thr	Arg	Tyr	Thr	Ser	Met	Arg	Pro	Asn	Gln
305				310						315					320
Leu	Gly	Gly	Trp	Ser	Ser	Val	Thr	Pro	Thr	Gln	Asn	Leu	Val	Asp	Ala

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325 330 335
 Tyr Trp Gly Val Asp Gly His Ser Val Pro Gln Leu Pro Thr Pro Glu
 340 345 350
 Glu Arg Ala Lys Ala Tyr Asn Gln Ile Lys Ala Asp Leu Asp Ala Tyr
 355 360 365
 Gln Lys Pro Glu Gly Glu Ala Lys Phe Ile Ala Phe Cys Gln Glu Lys
 370 375 380
 Ile Lys Asn Gly Thr Leu Lys Asp Tyr Lys Tyr Ile Gln Glu Phe Arg
 385 390 395 400
 Asn Arg Asp Ser Arg Met Tyr Val Ser Ile Leu Met Pro Phe Lys Ser
 405 410 415
 Trp Tyr Glu Ser Asn Tyr Gly Asp Lys Phe Val Tyr Glu Trp Ile Lys
 420 425 430
 Asn Gly Asn Asn Glu Ser Lys Thr Gly Phe Asn Phe Arg Lys Met Leu
 435 440 445
 Ser Leu Glu Asn Asp Ala Asn Gly Asp Gly Gln Ala Thr Gly Asp Tyr
 450 455 460
 Pro Cys Ile Arg Tyr Ala Glu Ile Leu Leu Ile Tyr Ala Glu Ala His
 465 470 475 480
 Thr Gln Thr Thr Gly Tyr Asp Ala Ala Thr Glu Ala Ala Leu Asn Gln
 485 490 495
 Leu Arg Asp Arg Cys Gly Met Pro Asp Val Pro Ser Gly Leu Ser Lys
 500 505 510
 Glu Glu Gly Leu Lys Leu Ile Gln Asn Glu Arg Arg Ile Glu Leu Ala
 515 520 525
 Gly Glu Gly Phe Arg Gly Asp Asp Met Thr Arg Tyr Ser Asp Asp Tyr
 530 535 540
 Trp Lys Glu His Met Asn Asn Val Pro Ile Met Thr Pro Asp Gly Asp
 545 550 555 560
 Thr Glu Leu Thr Met Lys Trp Ser Ser Arg Met Arg Leu Lys Pro Ile
 565 570 575
 Pro Gln Thr Ala Ile Asp Leu Asn Pro Leu Leu Ala Gly Asp Gln Asn
 580 585 590
 Pro Gly Tyr
 595

<210> 8617

<211> 77

<212> PRT

<213> B.fragilis

<400> 8617

Arg Leu Lys Lys Gly Val Ala Val Asn Arg Ile Ala Ile Lys Ala Gln
 1 5 10 15
 Val Leu Thr Gly Gly Arg Gly Lys Ala Gly Gly Val Lys Leu Ala Asn
 20 25 30
 Asn Asp Arg Asp Val Tyr Gln Tyr Ala Gln Thr Ile Leu Glu Met Thr
 35 40 45
 Ile Lys Gly Tyr Pro Val Thr Lys Asn Phe Leu Asn Glu Ala Gly Asn
 50 55 60
 Ile Gly Ser Arg Ile Leu His Gln Phe Tyr Asp Arg Pro
 65 70 75

<210> 8618

<211> 668

<212> PRT

<213> B.fragilis

<400> 8618

Arg Gly Thr Arg Ile Asp Cys Leu Arg Tyr Ser Ser Pro Arg Gly Glu
 1 5 10 15
 Asp Ser Thr Ser Asp Asn Asp Lys Gly Gly Val Val Tyr Thr His Leu
 20 25 30
 Leu Thr Ile Pro Ser Thr Tyr Val Ala Arg Gln Ser Asn Gly Glu Trp
 35 40 45
 Gly Ser Tyr Glu Gly Gly Lys Pro Ala Ala Thr Val Asn Met Glu Arg
 50 55 60
 Asn Pro Leu Arg Arg Leu Glu Glu Gly Gly Trp Ser Asn Ser Lys Thr
 65 70 75 80
 Gln Asn Thr Leu Ile Asn Leu Ala Leu Asp Ile Lys Pro Val Lys Gly
 85 90 95
 Leu Val Leu Thr Gly Glu Met Ile Tyr Lys Ala Trp Asp Tyr Lys Ser
 100 105 110
 Lys Thr Tyr Thr Ala Asn Lys Ser Lys Ile Lys Asp Phe Gln Thr Gly
 115 120 125
 Thr Glu Leu Asn Gly Thr Asp Val Thr Asn Ser Lys Met Glu Tyr Ser
 130 135 140
 Trp Glu Glu Asn Ser Arg Leu Thr Tyr Asn Ala Leu Ala Asn Tyr Val
 145 150 155 160
 Trp Ser Asn Glu Lys His Asn Val Asn Val Leu Ala Gly Val Ser Tyr
 165 170 175
 Glu His Tyr Lys Tyr Gln Lys Gln Lys Ser Tyr Arg Leu Lys Phe Pro
 180 185 190
 Thr Asn Gly Met Thr Asp Met Asn Gly Gly Ser Ser Ala Pro Asp Asp
 195 200 205
 Thr Tyr Ala Glu Gly Gly Ser Asn Glu Asp Lys Leu Met Ser Tyr Phe
 210 215 220
 Gly Arg Val Asn Tyr Ser Phe Met Asp Arg Tyr Leu Leu Glu Ala Asn
 225 230 235 240
 Ile Arg Ala Asp Ala Ser Phe Arg Phe His Lys Asp Asn Arg Trp Gly
 245 250 255
 Val Phe Pro Ser Phe Ser Ala Gly Trp Arg Ile Ser Gln Glu Gly Phe
 260 265 270
 Met Gln Asp Ile Asn Trp Ile Asn Asn Leu Lys Leu Arg Ala Ser Trp
 275 280 285
 Gly Gln Leu Gly Asn Ile Asn Asp Val Gly Gln Tyr Asp Tyr Phe Ser
 290 295 300
 Ser Tyr Gln Gln Gly Gly Asn Tyr Asn Phe Glu Asp Ala Ile Val Ser
 305 310 315 320
 Gly Ile Val Glu Ser Lys Pro Ala Asn Pro Thr Leu Gly Trp Glu Thr
 325 330 335
 Val Thr Ile Thr Asp Ile Gly Val Asp Phe Asp Ile Phe Asn Gly Leu
 340 345 350
 Leu Asn Phe Thr Ala Asp Tyr Tyr Asn Lys Lys Thr Asp Asp Ile Leu
 355 360 365
 Leu Ala Tyr Pro Ser Pro Lys Glu Ile Gly Ile Gly Ser Asp Phe Lys
 370 375 380
 Val Ser Gln Asn Ile Gly Thr Val Ser Asn Lys Gly Leu Glu Leu Ser
 385 390 395 400
 Ile Thr His Asn Lys Thr Leu Gly Asp Phe Ala Tyr Thr Val Gly Phe
 405 410 415
 Asn Met Ser Lys Asn Trp Asn Lys Val Thr Asn Leu Gly Ala Asn Asp
 420 425 430
 Pro Ile Ile Glu Ser Pro Trp Ile Lys Lys Val Gly Tyr Ala Ile Gly
 435 440 445
 Thr Phe Tyr Gly Tyr Arg Ser Asp Gly Leu Leu Thr Gln Glu Asp Ile
 450 455 460
 Asp Thr Gly Asn Tyr Ile Thr Asp Gly Leu Val Pro Gln Ala Gly Asp

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465 470 475 480
 Ile Lys Tyr Val Asp Leu Asp Gly Asp Gly Lys Leu Thr Asp Lys Asp
 485 490 495
 Arg Thr Tyr Ile Gly Cys Asp Val Pro Asp Ile Thr Tyr Gly Val Asn
 500 505 510
 Leu Asn Leu Arg Tyr Lys Gly Phe Glu Leu Ser Met Phe Gly Gln Gly
 515 520 525
 Val Thr Gly Thr Lys Val Asn Phe Ser Met Glu Asn Ala Trp Ala Phe
 530 535 540
 Ser Asp Tyr Ala Ser Pro Arg Lys Tyr His Leu Lys Arg Trp Thr Val
 545 550 555 560
 Asp Asn Pro Asn Pro Asn Ala Ala Tyr Pro Arg Ile Tyr Pro Arg Thr
 565 570 575
 Ser Lys His Ser Thr Tyr Asn Gln Tyr Phe Ser Asp Tyr Trp Leu Leu
 580 585 590
 Asn Ala Asp Tyr Phe Arg Ile Lys Asn Ile Thr Phe Gly Tyr Ser Phe
 595 600 605
 Gln Lys Pro Val Leu Gln Lys Leu Ser Leu Glu Ala Leu Lys Leu Tyr
 610 615 620
 Val Ala Ala Glu Asn Pro Phe Thr Ile Arg Ala Asp His Arg Met Glu
 625 630 635 640
 Asp Phe Asp Pro Glu Thr Ala Ser Gly Arg Gly Val Asn Thr Arg Gly
 645 650 655
 Thr Ser Ser Ile Ala Phe Gly Val Asn Leu Thr Phe
 660 665

<210> 8619
 <211> 405
 <212> PRT
 <213> B.fragilis

<400> 8619

Val Lys His Asn Leu Lys Thr Met Lys Lys Ser Ile Leu Ile Ala Val
 1 5 10 15
 Leu Thr Ala Ser Ile Ala Thr Ser Ala Phe Ala Gln Trp Lys Pro Ala
 20 25 30
 Gly Asp Lys Ile Lys Thr Lys Trp Ala Glu Gln Val Asn Pro Glu Asn
 35 40 45
 Val Leu Pro Glu Tyr Pro Arg Pro Val Met Glu Arg Gly Glu Trp Lys
 50 55 60
 Asn Leu Asn Gly Leu Trp Asn Tyr Ala Ile Thr Glu Lys Gly Ala Ala
 65 70 75 80
 Pro Ser Ala Tyr Glu Gly Gln Ile Leu Val Pro Phe Ala Ile Glu Ser
 85 90 95
 Ser Leu Ser Gly Val Gly Lys Lys Val Gly Pro Asp Lys Glu Leu Trp
 100 105 110
 Tyr Gln Arg Thr Phe Thr Val Pro Ala Ser Trp Lys Gly Lys Lys Val
 115 120 125
 Met Leu Asn Phe Gly Ala Val Asp Trp Lys Ala Asp Ile Trp Val Asn
 130 135 140
 Asp Ile Lys Val Gly Gln His Thr Gly Gly Phe Thr Pro Phe Ser Leu
 145 150 155 160
 Asp Ile Thr Ala Ala Leu Ala Thr Lys Gly Asp Asn Lys Leu Val Val
 165 170 175
 Lys Val Trp Asp Pro Thr Asp Arg Gly Pro Gln Pro Arg Gly Lys Gln
 180 185 190
 Val Asn Arg Pro Glu Gly Ile Trp Tyr Thr Ala Val Thr Gly Ile Trp
 195 200 205
 Gln Thr Val Trp Met Glu Pro Val Ala Glu Arg His Ile Thr Asn Val

210		215		220
Arg Thr Thr Ser Asp Ile Asp Arg Lys Lys Leu Thr Val Asp Val Thr				
225		230		235
Thr Ser Thr Ser Cys Pro Ser Glu Val Val Glu Val Lys Val Phe Asp				240
		245		250
				255
Gly Lys Gln Leu Val Ala Thr Gly Lys Gly Leu Asn Gly Gln Thr Ile				
		260		265
				270
Asp Ile Gln Met Pro Ala Asp Ala Lys Leu Trp Ser Pro Ala Ser Pro				
		275		280
				285
Thr Leu Tyr Ser Met Gln Ile Ala Leu Leu Ser Asn Gly Lys Val Thr				
		290		295
				300
Asp Lys Val Asp Ser Tyr Thr Ala Met Arg Lys Tyr Ser Thr Arg Arg				
		305		310
				315
Asp Lys Asp Gly Ile Val Arg Leu Gln Leu Asn Asn Glu Asp Val Phe				
		325		330
				335
Gln Phe Arg Ser Ser Arg Ser Lys Met Val Ala Arg Arg Thr Val Tyr				
		340		345
				350
Ser Phe Asp Arg Arg Arg Gly Gly Tyr Asp Ile Gln Lys Thr Lys Asp				
		355		360
				365
Phe Gly Phe Asn Met Ile Arg Lys His Val Lys Gly Glu Pro Ala Arg				
		370		375
				380
Trp Tyr Ser His Cys Asp Lys Leu Gly Ile Ile Val Trp Gln Asp Leu				
		385		390
				395
Pro Lys Trp Glu Pro				400
		405		

<210> 8620

<211> 691

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (218)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8620

Lys His Pro Asn Met Lys Lys Met Lys Ser Leu Lys Gly Gly Leu Ala				
1	5	10	15	
Gly Ile Leu Phe Thr Ala Gly Leu Leu Ala Ala Ser Cys Thr Ser Asp				
	20	25	30	
Gln Ser Ser Ser Ala Val Thr Ile Val Asn Arg Pro Asp Cys Thr Gln				
	35	40	45	
Thr Asn Val Asn Tyr Val Gly Asn Arg Leu Pro Leu Lys Pro Met Asn				
	50	55	60	
Phe Ile Lys Leu Pro Val Gly Ser Ile Gln Pro Glu Gly Trp Leu Lys				
	65	70	75	80
Lys Tyr Leu Glu Leu Gln Lys Asp Gly Leu Thr Gly His Leu Asn Glu				
	85	90	95	
Ile Ser Ala Trp Leu Gly Lys Glu Asn Asn Ala Trp Leu Thr Lys Gly				
	100	105	110	
Gly Asp His Gly Trp Glu Glu Val Pro Tyr Trp Leu Lys Gly Tyr Gly				
	115	120	125	
Asn Leu Ala Tyr Ile Leu Lys Asp Gln Lys Met Ile Asp Glu Ala Lys				
	130	135	140	
Val Trp Leu Glu Gly Ala Phe Ala Ser Gln Gln Pro Asp Gly Tyr Phe				
	145	150	155	160
Gly Pro Ile Asn Glu Arg Asn Gly Lys Arg Glu Leu Trp Ala Gln Met				
	165	170	175	

Ile Met Leu Trp Cys Leu Gln Ser Tyr Tyr Glu Tyr Ser Asn Asp Gln
 180 185 190
 Arg Val Ile Asp Leu Met Thr Asn Tyr Phe Lys Trp Gln Leu Ser Val
 195 200 205
 Pro Asp Glu Gln Phe Leu Glu Asp Tyr Xaa Glu Asn Ser Arg Gly Gly
 210 215 220
 Asp Asn Leu Leu Ser Val Tyr Trp Leu Tyr Asn Arg Thr Gly Asp Gln
 225 230 235 240
 Phe Leu Leu Glu Leu Ala Glu Lys Ile His Arg Asn Thr Ala Asp Trp
 245 250 255
 Thr Arg Pro Ser Ala Leu Arg Asn Trp His Asn Val Asn Ile Ala Gln
 260 265 270
 Cys Phe Arg Glu Pro Ala Thr Tyr Tyr Met Met Thr Gly Asp Ser Ala
 275 280 285
 Met Leu Lys Ala Ser Tyr Asn Val His Asn Leu Ile Arg Arg Thr Phe
 290 295 300
 Gly Gln Val Pro Gly Gly Met Phe Gly Ala Asp Glu Asn Ala Arg Met
 305 310 315 320
 Gly Ser Ile Asp Pro Arg Gln Gly Val Glu Thr Cys Gly Leu Val Glu
 325 330 335
 Gln Met Ala Ser Asp Glu Leu Met Leu Cys Met Thr Gly Asp Pro Leu
 340 345 350
 Trp Ala Glu His Cys Glu Glu Val Ala Phe Asn Ser Tyr Pro Ala Ala
 355 360 365
 Val Met Pro Asp Phe Lys Gly Leu Arg Tyr Ile Thr Cys Pro Asn Gln
 370 375 380
 Thr Val Ser Asp Ser Lys Asn His His Pro Gly Ile Asp Asn Arg Gly
 385 390 395 400
 Pro Phe Leu Ala Met Asn Pro Phe Ser Ser Arg Cys Cys Gln His Asn
 405 410 415
 His Ala Gln Gly Trp Pro Tyr Tyr Ala Glu His Leu Ile Leu Ala Thr
 420 425 430
 Pro Asp Asn Gly Val Ala Ala Ala Met Tyr Ala Ala Cys Lys Ala Thr
 435 440 445
 Val Lys Val Gly Asp Gly Ser Glu Ile Ser Leu His Glu Gln Thr Asn
 450 455 460
 Tyr Pro Phe Glu Glu Thr Ile Arg Phe Thr Val Asn Thr Pro Lys Ala
 465 470 475 480
 Val Ser Phe Pro Phe Tyr Leu Arg Ile Pro Ser Trp Thr Glu Gly Ala
 485 490 495
 Thr Ile Phe Val Asn Gly Lys Lys Val Ala Ala Asn Pro Glu Ala Gly
 500 505 510
 Gln Tyr Ala Cys Ile Asn Arg Glu Trp Lys Asp Asn Asp Gln Val Glu
 515 520 525
 Ile Gln Leu Pro Met Gln Leu Ser Met Arg Thr Trp Gln Val Asn Lys
 530 535 540
 Asn Ser Val Ser Val Asp Tyr Gly Pro Leu Thr Met Ser Leu Lys Ile
 545 550 555 560
 Asp Glu Asp Tyr Val Lys Lys Asp Ser Arg Ala Thr Ala Ile Gly Asp
 565 570 575
 Ser Lys Trp Gln Glu Gly Ala Asp Ala Ser Gln Trp Pro Thr Tyr Glu
 580 585 590
 Ile Tyr Ala Lys Thr Pro Trp Asn Tyr Ala Leu Val Leu Gly Lys Asn
 595 600 605
 Glu Pro Leu Lys Asp Phe Lys Val Val His Lys Glu Trp Pro Ala Asp
 610 615 620
 Asn Phe Pro Phe Thr Val Ala Ser Thr Pro Ile Glu Val Lys Ala Ile
 625 630 635 640
 Gly Arg Lys Val Pro Ser Trp Val Ile Asp Gln Tyr Asp Leu Cys Ser

645 650 655
 Glu Leu Pro Glu Met Asp Ala Pro Lys Gly Glu Lys Glu Glu Ile Thr
 660 665 670
 Leu Ile Pro Met Gly Ala Ala Arg Leu Arg Val Ser Ala Phe Pro Asn
 675 680 685
 Thr Arg Glu
 690

<210> 8621

<211> 528

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (65), (517)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8621

Leu Ser Arg Leu Val Ala Ala Tyr Gly Asp Ala Glu Asn Thr Pro Ala
 1 5 10 15
 Ile Leu Phe Cys His Glu Arg Ser Thr Gly His Pro Val Tyr Asp Arg
 20 25 30
 Leu Phe Pro Leu Ser Thr Glu Asn Val Thr Gly Lys Ala Ala Arg Gln
 35 40 45
 Leu Asp Phe Leu Gly Arg Val Ser Trp Pro Cys Lys Asn Ile Gln Ala
 50 55 60
 Xaa Tyr Trp Leu Tyr Asn Ile Thr Gly Asp Ser Phe Leu Leu Asp Leu
 65 70 75 80
 Gly Lys Leu Ile His Gln Gln Ser Phe Ser Phe Val Asp Met Val Asn
 85 90 95
 Arg Gly Asp Leu Lys Arg Ile Asn Thr Ile His Cys Val Asn Leu Ala
 100 105 110
 Gln Gly Ile Lys Glu Pro Val Ile Tyr Tyr Gln Gln Glu Pro Asp Lys
 115 120 125
 Met Tyr Leu Asp Ala Val Lys Cys Ala Phe Arg Asp Ile Arg Gln Phe
 130 135 140
 His Gly Gln Pro Gln Gly Met Tyr Gly Gly Asp Glu Ala Leu His Gly
 145 150 155 160
 Asn Asn Pro Thr Gln Gly Ser Glu Leu Cys Ser Ala Val Glu Leu Met
 165 170 175
 Tyr Ser Leu Glu Lys Met Val Glu Ile Thr Gly Asp Ile Asp Phe Ala
 180 185 190
 Asp His Leu Glu Arg Ile Ala Phe Asn Ala Leu Pro Thr Gln Ile Ser
 195 200 205
 Asp Asp Phe Met Thr Lys Gln Tyr Phe Gln Gln Ala Asn Gln Val Met
 210 215 220
 Val Ser Arg His Arg Arg Asn Phe Asp Gln Asp His Gly Gly Thr Asp
 225 230 235 240
 Asn Cys Phe Gly Leu Leu Thr Gly Tyr Pro Cys Cys Ala Ser Asn Met
 245 250 255
 His Gln Gly Trp Pro Lys Phe Thr Gln Ser Leu Trp Tyr Ala Thr Pro
 260 265 270
 Asp Gly Gly Leu Ala Val Thr Ala Tyr Ala Pro Ser Glu Val Thr Ala
 275 280 285
 Lys Val Ala Asp Gly Cys Thr Val Thr Phe Ser Glu Glu Thr Tyr Tyr
 290 295 300
 Pro Met Asp Asp Lys Ile Ser Phe Thr Leu Gln Ser Met Asp Lys Lys
 305 310 315 320

Arg Lys Glu Val Asn Phe Ala Leu Gln Leu Arg Ile Pro Lys Trp Cys
 325 330 335
 Arg Gln Ala Gly Ile Ser Val Asn Gly Gln Leu Leu Gln His Ala Glu
 340 345 350
 Gly Gly Arg Met Ala Ile Val Asn Arg Asn Trp Lys Lys Gly Asp Arg
 355 360 365
 Val Glu Leu His Leu Pro Met Glu Val Thr Ala Ser Thr Trp Tyr Glu
 370 375 380
 Asn Ser Val Thr Ile Glu Arg Gly Pro Leu Val Phe Ala Leu Lys Met
 385 390 395 400
 Glu Glu Lys Trp Glu Lys Lys Glu Phe Glu Glu Pro Trp Tyr Gly Pro
 405 410 415
 Tyr Tyr Tyr Ser Val Thr Pro Thr Glu Pro Trp Asn Tyr Gly Leu Val
 420 425 430
 Asp Phe Asn Arg Asn Lys Ala Asn Glu His Ala Arg Val Thr Ile His
 435 440 445
 Thr Glu Lys Gln Ser Ser Val Phe Pro Trp Asn Lys Glu Asn Ala Pro
 450 455 460
 Ile Glu Ile Arg Met Lys Ala Arg Leu Val Pro Ser Trp Lys Leu Tyr
 465 470 475 480
 Asn Glu Met Ala Gly Pro Gln Pro Tyr Ser Phe Cys Ser Gly Gly Glu
 485 490 495
 Arg Ala Gly Asn Arg Asn His Pro Glu Phe Leu Trp Met His Tyr Ile
 500 505 510
 Lys Asn Thr Glu Xaa Pro Val Val Gly Ala Phe Arg Leu Arg Gly Asp
 515 520 525

<210> 8622

<211> 244

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (227)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8622

Ser Ile Asn Arg Lys Thr Leu Met Lys Lys Lys Asn Thr Phe Thr Tyr
 1 5 10 15
 Leu Leu Ile Gly Leu Gly Leu Cys Phe Ser Ser Leu Gly Ser Gly Leu
 20 25 30
 Arg Ala Asp Thr Pro Glu Asn Tyr Thr Asn Asn Arg Tyr Pro Leu Val
 35 40 45
 Arg Lys Pro Leu Met Glu Leu Pro Leu Gly Ser Ile Lys Ala Lys Gly
 50 55 60
 Trp Leu Gln Glu Met Leu Val Arg Gln Lys Asn Gly Ala Thr Gly Gln
 65 70 75 80
 Met Asp Lys Leu Tyr Pro Leu Val Met Gly Glu Arg Asn Gly Trp Leu
 85 90 95
 Gly Gly Asp Gly Asp Gln Trp Glu Arg Gly Pro Tyr Trp Ile Asp Gly
 100 105 110
 Leu Leu Pro Leu Ala Tyr Ile Leu Asp Asp Ala Gln Leu Lys Ala Lys
 115 120 125
 Val Gln Pro Trp Ile Glu Trp Ala Leu Lys Ser Gln Arg Glu Asp Gly
 130 135 140
 Phe Phe Gly Pro Ala Lys Asp Tyr Pro Gly Glu Ala Gly Ile Gln Arg
 145 150 155 160
 Asp Asn Ser His Asp Trp Trp Pro Arg Met Val Met Leu Lys Ile Leu

165 170 175
 Gln Gln Tyr Tyr Ser Ala Thr Asn Asp Gln Arg Val Ile Arg Phe Met
 180 185 190
 Thr Asp Tyr Phe Arg Tyr Gln Leu Lys Thr Leu Pro Glu Lys Pro Leu
 195 200 205
 Gly Asn Trp Thr Phe Trp Ala Glu Phe Pro Gly Leu Ala Lys Ile Ser
 210 215 220
 Arg Pro Xaa Thr Gly Ser Ile Ile Ser Pro Val Ile His Ser Tyr Ser
 225 230 235 240
 Ile Ser Ala Asn

<210> 8623
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 8623
 Pro Leu Gly Gly Lys Lys Phe Phe His Trp Lys Trp Gly Phe Lys Ser
 1 5 10 15
 Phe Phe Pro Phe His Phe Lys Ala Gly Lys Lys Glu Asp Leu Cys Met
 20 25 30
 Asn Ile Arg Leu Leu Leu Ile Trp Phe Gly Met Ile Asn His Leu Ser
 35 40 45
 Ile Gly Arg Leu Pro Leu Pro Glu Ile Pro Tyr Ser
 50 55 60

<210> 8624
 <211> 371
 <212> PRT
 <213> B.fragilis

<400> 8624
 Gln Lys Ala Met Lys Thr Lys Ile Tyr Leu Leu Phe Ile Thr Thr Leu
 1 5 10 15
 Phe Phe Cys Ala Gly Cys Gly Asn Lys Ser Gly Gly Gln Lys Gln Glu
 20 25 30
 Ser Val Ser Ala Ala Lys Asp Thr Tyr Val Asn Pro Leu Phe Pro Glu
 35 40 45
 Gly Ala Asp Pro Ser Ala Leu Phe His Asn Gly Lys Tyr Tyr Tyr Thr
 50 55 60
 His Gly Thr Glu Asp Lys Ile Met Leu Trp Glu Thr Ser Asp Ile Thr
 65 70 75 80
 Asp Met Ala His Ala Val Cys Lys Ile Val Trp Lys Pro His Asp Pro
 85 90 95
 Ser Asn Ser Cys His Leu Trp Ala Pro Glu Ile His Tyr Ile Asn Asp
 100 105 110
 Lys Trp Tyr Ile Tyr Tyr Ala Ala Asp Gly Asp Asn Ala Asp Asn His
 115 120 125
 Gln Leu Tyr Val Leu Glu Asn Ser Ser Pro Asp Pro Met Glu Gly Lys
 130 135 140
 Phe Glu Met Lys Gly Ser Ile Ile Thr Asn Pro Glu Trp Asn Trp Gly
 145 150 155 160
 Ile Gln Ala Thr Thr Phe Glu His Lys Gly Val Arg Tyr Leu Ala Trp
 165 170 175
 Ser Gly Trp Pro Lys Arg Arg Thr Asn Ala Glu Thr Gln Cys Ile Tyr
 180 185 190
 Ile Ala Arg Met Lys Asp Pro Trp Thr Leu Asp Ser Pro Arg Val Leu
 195 200 205

Ile Ser Lys Pro Glu Tyr Glu Trp Glu Arg Gln Trp Val Asn Pro Asp
 210 215 220
 Gly Ser Arg Thr Ala Tyr Pro Ile Tyr Val Asn Glu Gly Pro Gln Phe
 225 230 235 240
 Phe His Ser Lys Asp Asn Lys Thr Leu Ile Leu Tyr Tyr Ala Ala Ser
 245 250 255
 Gly Ser Trp Ser Pro Tyr Tyr Cys Val Gly Met Leu Thr Ala Asp Ala
 260 265 270
 Glu Ser Asp Leu Leu Asp Pro Ala Ser Trp Thr Lys Ser Ser Val Pro
 275 280 285
 Val Phe Gln Gln Ser Leu Glu Asn Glu Val Tyr Gly Pro Gly Gly Leu
 290 295 300
 Ser Phe Val Pro Ser Pro Asp Gly Thr Glu Trp Tyr Met Ile Tyr His
 305 310 315 320
 Ala Arg Gln Val Thr Asn Gly Asp Thr Gly Ser Pro Glu Thr Arg Asn
 325 330 335
 Pro Arg Ile Gln Lys Ile Gly Trp Asp Ala His Gly Met Pro Asp Leu
 340 345 350
 Gly Ile Pro Val Arg Ala Gly Val Ala Leu Pro Lys Pro Ser Gly Thr
 355 360 365
 Leu Leu Lys
 370

<210> 8625

<211> 740

<212> PRT

<213> B.fragilis

<400> 8625

Tyr Tyr Glu Ser Met Lys Leu Asn Ser Phe Pro His Tyr Leu Gln Leu
 1 5 10 15
 Asp Ala Met Asp Cys Gly Pro Ser Cys Leu Arg Met Ile Ala Lys Tyr
 20 25 30
 Tyr Gly Lys Ser Tyr Ser Leu Gln Thr Leu Arg Ala Arg Ser Phe Ile
 35 40 45
 Thr Arg Glu Gly Val Ser Met Leu Gly Ile Ser Asp Ala Ala Glu Ser
 50 55 60
 Ile Gly Phe Arg Thr Ser Gly Val Arg Ile Ser Leu Glu Gln Leu Lys
 65 70 75 80
 Lys Asp Val Pro Leu Pro Cys Ile Leu His Trp Asn Gln Asn His Phe
 85 90 95
 Val Val Cys Tyr Asp Ile Lys Lys Lys Arg Ser Gly Tyr Arg Phe Tyr
 100 105 110
 Ile Ala Asp Pro Ala Arg Gln Leu Ile Ser Tyr Ser Glu Glu Glu Phe
 115 120 125
 Lys Lys Cys Trp Leu Ser Thr Lys Val Asn Gly Glu Glu Lys Gly Ala
 130 135 140
 Ala Leu Ala Leu Glu Pro Gly Pro Glu Phe Gln Gly Gln Gly Asp Glu
 145 150 155 160
 Glu Glu Ser Gly Ser Arg Ser Leu Arg Phe Phe Leu Lys Tyr Leu Ser
 165 170 175
 Pro Tyr Arg Lys Gln Leu Ile Gln Leu Ile Leu Gly Met Leu Thr Ala
 180 185 190
 Ser Leu Leu Gln Leu Ile Phe Pro Phe Leu Thr Gln Ser Leu Val Asp
 195 200 205
 Val Gly Ile Arg Asp Gly Asn Leu Asn Phe Ile Thr Leu Ile Leu Ile
 210 215 220
 Ser Gln Leu Val Ile Ser Val Ser Gln Leu Ser Val Glu Phe Ile Arg
 225 230 235 240

Ser	Trp	Ile	Met	Leu	His	Met	Asn	Thr	Arg	Ile	Asn	Ile	Ser	Leu	Ile
				245					250					255	
Ser	Asp	Phe	Leu	Ala	Lys	Leu	Met	Lys	Leu	Pro	Leu	His	Tyr	Phe	Asp
			260					265					270		
Thr	Lys	Met	Ile	Gly	Asp	Ile	Met	Gln	Arg	Ile	Gly	Asp	His	Gly	Arg
		275					280					285			
Ile	Glu	Ser	Phe	Leu	Thr	Gly	Ser	Ser	Ile	Ser	Thr	Leu	Phe	Ser	Phe
	290					295					300				
Val	Asn	Phe	Phe	Ile	Phe	Ala	Phe	Val	Leu	Ala	Tyr	Tyr	Asn	Leu	Gly
305				310						315					320
Ile	Leu	Ala	Ile	Phe	Leu	Val	Gly	Asn	Ser	Leu	Tyr	Ile	Cys	Trp	Ile
			325						330					335	
Leu	Val	Phe	Met	Lys	Tyr	Arg	Arg	Glu	Leu	Asp	Ile	Arg	Arg	Phe	Ala
			340					345					350		
Gln	Ala	Ala	Gly	Glu	Gln	Ser	Ser	Leu	Ile	Gln	Leu	Val	Thr	Ala	Met
		355					360					365			
Gln	Glu	Ile	Lys	Leu	Asn	Asn	Cys	Glu	Lys	Gln	Lys	Arg	Trp	Gln	Trp
	370				375						380				
Glu	Arg	Ile	Gln	Val	Lys	Leu	Phe	Lys	Ile	Ser	Val	Lys	Gly	Leu	Ala
385				390						395					400
Leu	Gly	Gln	Val	Gln	Gln	Val	Gly	Ser	Val	Phe	Phe	Asn	Gln	Thr	Thr
			405						410					415	
Asn	Ile	Val	Ile	Ser	Phe	Ile	Ala	Ala	Lys	Ser	Val	Val	Glu	Gly	Asn
		420						425					430		
Met	Thr	Leu	Gly	Met	Met	Met	Ser	Leu	Thr	Tyr	Ile	Ile	Gly	Gln	Leu
		435					440					445			
Ser	Gly	Pro	Ile	Gly	Ser	Phe	Ile	Gly	Phe	Ala	Gln	Leu	Gln	Asp	
		450			455					460					
Ala	Lys	Ile	Ser	Leu	Glu	Arg	Leu	Asn	Glu	Ile	His	Gly	Gln	Lys	Asp
465				470						475					480
Glu	Glu	Gln	Asp	Ile	Ala	Ser	Lys	Leu	Thr	Val	Leu	Pro	Glu	Arg	Arg
			485						490					495	
Asp	Ile	Arg	Ile	Glu	Asn	Leu	Ser	Phe	Ser	Tyr	Asp	Gly	Ala	Asp	Arg
		500						505					510		
Asp	Tyr	Val	Leu	Asn	Asp	Val	Asn	Leu	Asn	Ile	Pro	Glu	His	Lys	Val
		515					520					525			
Thr	Ala	Ile	Val	Gly	Ala	Ser	Gly	Ser	Gly	Lys	Thr	Thr	Leu	Ile	Lys
	530				535						540				
Leu	Met	Leu	Gly	Phe	Tyr	Thr	Pro	Asn	Lys	Gly	Asp	Ile	Lys	Ile	Gly
545				550						555					560
Glu	Thr	Pro	Leu	Asp	Val	Val	Asn	Pro	His	Leu	Trp	Arg	Ala	Lys	Ser
			565						570					575	
Gly	Ser	Val	Met	Gln	Asp	Gly	Phe	Ile	Leu	Ser	Asp	Thr	Ile	Ala	Asn
		580						585					590		
Asn	Ile	Ala													

705 710 715 720
 Leu Thr Glu Lys Lys Gly Leu Tyr Tyr Gln Leu Val Lys Asn Gln Leu
 725 730 735
 Glu Leu Gly Ser
 740

<210> 8626
 <211> 203
 <212> PRT
 <213> B.fragilis

<400> 8626
 Lys Lys Asn Lys Met Asp Ala His Ile Glu Gln Ile Ala Lys Ser Leu
 1 5 10 15
 Tyr Phe Ser Cys Lys Gln Phe Asp Ile Gly Leu Phe Tyr Gly Lys Met
 20 25 30
 Gly Arg Cys Leu Phe Phe Phe Asp Tyr Ser Arg Val Thr Glu Leu Arg
 35 40 45
 Ala Phe Glu Glu Leu Ala Gly Glu Leu Leu Asp Glu Val Met Glu Ser
 50 55 60
 Val Cys Leu Gly Met Pro Val Gly Leu Ser Phe Gly Trp Cys Gly Ile
 65 70 75 80
 Gly Trp Gly Val Glu Tyr Leu Val Arg Lys Gly Phe Val Glu Asp Asp
 85 90 95
 Asp Asn Glu Gly Arg Asn Lys Ile Asp Glu Lys Val Met Glu Tyr Asp
 100 105 110
 Val Arg Arg Leu Gly Asp Tyr Ser Leu Ala Thr Gly Leu Glu Gly Ile
 115 120 125
 Ser Trp Tyr Val Leu Leu Arg Leu Tyr Ser Gly Asp Lys Gly Val Arg
 130 135 140
 Ile Gly Glu Lys Asn Tyr Leu Ser Asp Leu Lys Ser Ala Cys Glu Lys
 145 150 155 160
 Ala Leu Lys Lys Gly Arg Tyr Glu Gly Ile Leu Leu Leu Leu Asp Phe
 165 170 175
 Leu Asn Gly Lys Arg Ala Asn Tyr Pro Phe Gly Glu Phe Phe Ser Gln
 180 185 190
 Ile Pro Gly Glu Ala His Tyr Ile Pro Asp Met
 195 200

<210> 8627
 <211> 223
 <212> PRT
 <213> B.fragilis

<400> 8627
 Tyr Val Met Lys Asp Ile Thr Met Leu Asn Lys Pro Pro Leu Asp Phe
 1 5 10 15
 Phe Gly Cys Asn Phe Cys Leu Val Glu Lys His Arg Met Ala Phe Val
 20 25 30
 Leu Ile Ser Lys Cys Gly Leu Thr Phe Leu Glu Asn Ile Ala Ile Tyr
 35 40 45
 Ala Ser Ala Gly Met Ile Pro Asp Thr Glu Asp Gln Thr His Phe Tyr
 50 55 60
 Ile Ala Arg Val Lys Pro Glu Arg Phe Leu Val Pro Val Ser Glu Met
 65 70 75 80
 Ser Gly Tyr Glu Arg Glu His Lys Ser Tyr Leu Lys Val Ala Val Trp
 85 90 95
 Arg Asp Pro Val Glu Arg Leu Val Ser Ala Tyr Lys Tyr Phe Ile Leu
 100 105 110

Glu Arg Thr Phe Asn Gln Tyr Met Tyr Met Cys Asn Leu Tyr Gln Asp
 115 120 125
 Cys Ser Phe Glu Arg Phe Leu Ser Phe Val Glu Phe Glu Leu Gly Lys
 130 135 140
 Ala Asn Pro Leu Trp Gln Asp Glu His Ile Arg Arg Gln Ser Asp Phe
 145 150 155 160
 Tyr Thr Ser Ala Asp Val Asp Cys Ile Val Pro Leu Ser Lys Leu Asn
 165 170 175
 Arg Phe Leu Ala Glu Arg Gly Val Asp Met Pro Glu Glu Lys Ala Asn
 180 185 190
 Ala Thr Ser Val Arg Phe Glu Leu Lys Asp Glu Lys Gln Ile Ala Lys
 195 200 205
 Ile Lys Glu Leu Tyr Arg Leu Asp Tyr Glu Ile Pro Val Gly Cys
 210 215 220

<210> 8628
 <211> 239
 <212> PRT
 <213> B.fragilis

<400> 8628
 Pro Leu Val Lys Thr Leu Ala Gly Arg Glu Cys Phe Ala Gly Val Met
 1 5 10 15
 Cys Tyr Cys Thr Lys Thr Arg Thr Asp Ile Val Ser Gly Asn Thr Leu
 20 25 30
 Ala Val His Ala Asp Gly Gln Val Gln Ser Trp Glu Arg Arg Gly Arg
 35 40 45
 Glu Leu Phe Ala Thr Gly Thr Val Val Ser Gly Ser Thr Tyr Phe Ser
 50 55 60
 Arg Val Met Asp Cys Arg Cys Tyr Val Pro Met Val Tyr Asn Tyr Leu
 65 70 75 80
 Tyr Arg Arg Asp Phe Ile Glu Gln Asn Gly Phe Arg Phe Glu Pro Gly
 85 90 95
 Leu Val His Glu Asp Glu Leu Trp Thr Pro Gln Val Leu Thr Thr Ala
 100 105 110
 Gln Lys Ile Thr Val Ala Asp Ile Asp Phe Tyr Tyr Tyr Arg Gln Arg
 115 120 125
 Glu Gly Ser Ile Met Thr Ala Thr Ala Ala Gly Arg Arg Ile Ala Ser
 130 135 140
 Ile Gln Leu Ile Ile Glu Lys Leu Leu Glu Tyr Ser Arg Lys His Leu
 145 150 155 160
 Phe Glu Lys Lys Tyr Arg Glu Ala Lys Glu Ala Leu Tyr Val Arg Leu
 165 170 175
 Leu Gln Ile Tyr Ser Thr Ala Cys Thr Leu His Pro Asp Gly Thr Tyr
 180 185 190
 Thr Thr Leu Tyr Asp Arg Ala Gly Glu Met Leu Arg Val Cys Glu Glu
 195 200 205
 Leu Arg Arg Gln Glu Ser Leu Gly Arg Trp Tyr Ser Glu Glu Ile Leu
 210 215 220
 Asn Arg Met Lys Leu Tyr Tyr Asp Arg Leu Gln Thr Met Glu Gly
 225 230 235

<210> 8629
 <211> 208
 <212> PRT
 <213> B.fragilis

<400> 8629
 Gly Cys Cys Ser Arg Arg Gly Asn Pro Pro Gly Thr Asp Gly Lys Glu

1	5	10	15
Arg Ile Val	Leu Ser Val	Gly Glu Glu	Ser Val Gly Ile Arg Lys Leu
	20	25	30
Asp Met Glu	Lys Glu His Thr	His Lys Glu Ile Glu	Leu Arg Ser Glu
	35	40	45
Glu Val Gln	Glu Val Met Asn	Arg Val Pro Ala Trp	Ile Leu Arg Ser
	50	55	60
Gly Ile Thr	Val Leu Phe Val	Ile Val Val Ala Leu	Val Ala Gly Ser
65		70	75
Tyr Trp Phe	Lys Tyr Pro Asp	Val Ile Ala Ala Glu	Val Thr Val Ser
	85	90	95
Thr Gln Asp	Pro Pro Ala Tyr	Val Val Ala Arg	Ala Ala Gly Arg Leu
	100	105	110
Glu Asn Leu	Tyr Val Gln Asn	Gly Gln Glu Val Glu	Pro Asp Thr Asn
	115	120	125
Leu Gly Thr	Ile Glu Asn Thr	Ala Cys Ala Ser	Asp Val Phe Ser Leu
	130	135	140
Gln Glu Arg	Met Arg Lys Trp	Lys Gln Glu Gly Tyr	Thr Pro Glu Ser
145		150	155
Gly Lys Gly	Leu Phe Leu His	Ser Glu Thr Asp	Arg Trp Arg Leu Gly
	165	170	175
Glu Ile Gln	Ser Ala Tyr Ala	Ala Phe Val Ser Thr	Leu Ser Glu Met
	180	185	190
Val Arg Met	Asn Glu Leu Gly	Tyr Tyr Ala Lys Lys	Leu Gln Ser Ser
	195	200	205

<210> 8630

<211> 255

<212> PRT

<213> B.fragilis

<400> 8630

Arg Pro Gln	Leu Glu Ser Phe	Glu Ser Ile Thr	Gly Lys Gly Ile Lys
1	5	10	15
Val Val Tyr	Gln Gly Asp Thr	Tyr Trp Val Gly	Ser His Lys Leu Leu
	20	25	30
Lys Asp Phe	Ser Ala Ser Leu	Ser Asp Val Leu	Ala Glu Met Met Val
	35	40	45
Gln Tyr Glu	Ser Asp Gly Asn	Ser Ile Val Tyr	Phe Gly Arg Gly Thr
	50	55	60
Glu Val Leu	Ala Val Val Ala	Ile Ala Asp Gln	Ile Lys Pro Thr Ser
65		70	75
Ala Glu Ala	Val Lys Glu Leu	Lys Arg Gln Gly	Ile Asp Ile Cys Met
	85	90	95
Leu Thr Gly	Asp Gly Gln Arg	Thr Ala Leu Ala	Val Ser Gly Lys Leu
	100	105	110
Gly Ile Asp	Arg Phe Val Ala	Asp Ala Leu Pro	Asp Asp Lys Glu Glu
	115	120	125
Phe Val Arg	Glu Leu Gln Met	Gln Gly Lys Thr	Val Ala Met Val Gly
	130	135	140
Asp Gly Ile	Asn Asp Ser Gln	Ala Leu Ala Leu	Ala Asp Val Ser Ile
145		150	155
Ala Met Gly	Lys Gly Thr Asp	Ile Ala Met Asp	Val Ala Met Val Thr
	165	170	175
Leu Met Thr	Ser Asp Leu Leu	Leu Leu Pro Arg	Ala Phe Glu Leu Ser
	180	185	190
Lys Gln Thr	Val Lys Leu Ile	His Gln Asn Leu	Phe Trp Ala Phe Ile
	195	200	205
Tyr Asn Leu	Ile Gly Ile Pro	Ile Ala Ala Gly	Ile Leu Phe Pro Val

210	215	220
Asn Gly Leu Leu Leu Asn	Pro Met Leu Ala Ser	Ala Ala Met Ala Phe
225	230	235
Ser Ser Val Ser Val Val	Leu Asn Ser Leu Ser	Leu Ala Arg Lys
245	250	255

<210> 8631
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 8631
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 1 5 10 15
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 20 25 30
 Lys Lys Lys Asn Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 35 40 45
 Lys Lys Asn Pro Gln Gly Pro Leu Cys Tyr Ser Val Pro Ser Val Val
 50 55 60
 Ser Ser Phe
 65

<210> 8632
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 8632
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 1 5 10 15
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 20 25 30
 Lys Lys Lys Ile Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 35 40 45
 Lys Lys Thr Pro Lys Asp Leu Cys Val Thr Leu Cys Pro Leu Trp
 50 55 60

<210> 8633
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 8633
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Pro Pro
 1 5 10 15
 Arg Thr Ser Val Leu Leu Cys Ala Leu Cys Gly Glu Phe Val Leu Lys
 20 25 30
 Gly Ile Val Ile Phe Trp Pro Asp Ser Val Asn Ser Ala Arg His Leu
 35 40 45
 His Leu Lys Met Pro Ser Leu His Trp Gln Ala Ser Asp
 50 55 60

<210> 8634
 <211> 767
 <212> PRT
 <213> B.fragilis

<400> 8634

8631 8632 8633 8634
 B.fragilis B.fragilis B.fragilis B.fragilis

Leu	Val	Ser	Pro	Cys	Ala	Val	Cys	Gly	Glu	Ser	Tyr	Leu	Phe	Leu	Ile
1				5					10					15	
Glu	Tyr	Lys	Pro	Asn	Lys	Lys	Asp	Lys	Arg	Arg	Asn	Leu	Met	Lys	Tyr
			20					25					30		
Met	Leu	Leu	Thr	Gly	Leu	Leu	Leu	Gly	Ser	Leu	Thr	Val	Gln	Ala	Gln
		35					40					45			
Val	Ser	Gly	Thr	Val	Lys	Asp	Gln	Ala	Gly	Glu	Pro	Ile	Ile	Gly	Ala
	50					55					60				
Asn	Val	Phe	Trp	Lys	Asn	Ile	Ser	Gly	Gly	Val	Ala	Thr	Arg	Glu	Asp
65					70					75					80
Gly	Thr	Phe	Ser	Ile	Ser	Lys	Pro	Asp	Lys	Ser	Asn	His	Leu	Ile	Val
				85					90					95	
Ser	Phe	Ile	Gly	Tyr	Glu	Asn	Asp	Thr	Ile	Gln	Val	Asn	Asp	Lys	Lys
			100					105					110		
Ala	Val	Leu	Asp	Val	Val	Leu	Arg	Glu	Gly	Met	Glu	Leu	Ser	Glu	Val
		115					120					125			
Gln	Ile	Val	Ser	Arg	Lys	Leu	Ser	Thr	Leu	Lys	Leu	Arg	Ser	Ser	Val
	130					135					140				
Met	Asn	Glu	Glu	Ile	Ile	Thr	Ser	Asp	Glu	Leu	Cys	Arg	Ala	Ala	Cys
145					150					155					160
Cys	Asn	Leu	Gly	Glu	Ser	Phe	Val	Thr	Asn	Pro	Ser	Val	Asp	Val	Ser
			165						170					175	
Tyr	Ser	Asp	Ala	Ala	Thr	Gly	Ala	Lys	Gln	Ile	Lys	Leu	Leu	Gly	Leu
			180					185					190		
Ser	Gly	Thr	Tyr	Val	Gln	Met	Leu	Thr	Glu	Asn	Ile	Pro	Asn	Tyr	Arg
		195					200					205			
Gly	Ala	Ala	Ser	Pro	Tyr	Gly	Leu	Gly	Tyr	Val	Pro	Gly	Pro	Trp	Met
	210					215					220				
His	Ser	Ile	Gln	Val	Ser	Lys	Gly	Ile	Ser	Ser	Val	Lys	Asn	Gly	Tyr
225					230					235					240
Glu	Ala	Leu	Thr	Gly	Gln	Ile	Asn	Val	Glu	Phe	Lys	Lys	Pro	Gln	Leu
			245						250					255	
Pro	Glu	Ala	Asp	Trp	Val	Ser	Ala	Asn	Leu	Phe	Ala	Ser	Thr	Thr	Asn
		260						265					270		
Arg	Tyr	Glu	Ala	Asn	Ala	Asp	Ala	Thr	Val	Lys	Leu	Ser	Lys	Arg	Trp
		275					280						285		
Ser	Thr	Ser	Leu	Leu	Ala	His	Tyr	Glu	Asn	Glu	Thr	Lys	Ala	His	Asp
	290					295					300				
Gly	Asn	Asp	Asp	Gly	Phe	Ala	Asp	Ile	Pro	Arg	Ile	Glu	Gln	Tyr	Asn
305					310					315					320
Phe	Trp	Asn	Arg	Trp	Ala	Tyr	Met	Gly	Asp	His	Tyr	Val	Phe	Gln	Ala
			325						330					335	
Gly	Ile	Lys	Ala	Leu	Asp	Glu	Ser	Arg	Lys	Gly	Gly	Gln	Val	Ser	His
			340					345					350		
Ser	Gly	Val	Pro	Ala	Ala	Asp	Arg	Tyr	Glu	Ile	Asp	Ile	Asp	Thr	Arg
		355					360					365			
Arg	Tyr	Glu	Ala	Phe	Thr	Lys	Asn	Ala	Tyr	Ile	Phe	Asn	Lys	Glu	Lys
	370					375					380				
Asn	Thr	Asn	Leu	Ala	Leu	Ile	Leu	Ser	Gly	Thr	Leu	His	Asn	Gln	Asp
385					390					395					400
Ala	Leu	Tyr	Gly	Arg	Lys	Ile	Tyr	Asn	Val	Asp	Gln	Ser	Asn	Ala	Tyr
			405						410					415	
Ala	Ser	Leu	Met	Phe	Glu	Thr	Glu	Phe	Thr	Lys	Glu	His	Asn	Leu	Ser
		420						425					430		
Ala	Gly	Phe	Ser	Tyr	Asn	Tyr	Asp	Gly	Tyr	Asp	Gln	His	Tyr	Arg	Leu
		435					440					445			
Thr	Asn	Asn	Ala	Glu	Thr	Pro	Leu	Thr	Lys	Ala	Phe	Ala	Arg	Glu	Ser
	450					455					460				
Val	Gly	Gly	Ala	Tyr	Ala	Gln	Tyr	Thr	Phe	Asn	Leu	Asp	Asn	Lys	Phe

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

465		470		475		480									
Val	Leu	Met	Ala	Gly	Leu	Arg	Gly	Asp	His	Ser	Ser	Glu	Tyr	Gly	Phe
			485					490						495	
Phe	Val	Thr	Pro	Arg	Ala	His	Ile	Lys	Tyr	Asn	Pro	Asn	Asp	Phe	Val
			500					505					510		
His	Phe	Arg	Leu	Ser	Ala	Gly	Lys	Gly	Tyr	Arg	Thr	Asn	His	Val	Leu
		515					520					525			
Ala	Glu	Asn	Asn	Tyr	Leu	Met	Ala	Ser	Ser	Arg	Lys	Val	Ser	Ile	Ala
	530					535					540				
Asp	His	Leu	Asp	Gln	Glu	Glu	Ala	Trp	Asn	Tyr	Gly	Ala	Ser	Ile	Ser
545					550					555					560
Gly	Tyr	Ile	Pro	Leu	Phe	Gly	Lys	Thr	Leu	Asn	Leu	Asn	Leu	Glu	Tyr
			565						570					575	
Tyr	Tyr	Thr	Asp	Phe	Leu	Lys	Gln	Val	Val	Val	Asp	Met	Asp	Thr	Asn
			580					585					590		
Pro	His	Glu	Val	Ala	Phe	Tyr	Asn	Leu	Asp	Gly	Arg	Ser	Tyr	Ser	Gln
		595					600					605			
Val	Phe	Gln	Val	Glu	Ala	Thr	Tyr	Pro	Phe	Phe	Gln	Gly	Phe	Ser	Leu
	610					615					620				
Thr	Ala	Ala	Tyr	Arg	Trp	Thr	Asp	Ala	Lys	Thr	Thr	Tyr	Asn	His	Gln
625					630					635					640
Leu	Met	Glu	Lys	Pro	Leu	Thr	Gly	Lys	Tyr	Lys	Gly	Leu	Val	Thr	Ala
			645						650					655	
Ser	Tyr	Gln	Thr	Pro	Leu	Gly	Leu	Trp	Gln	Phe	Asp	Ala	Thr	Trp	Gln
		660						665					670		
Met	Asn	Gly	Gly	Gly	Arg	Met	Pro	Asn	Pro	Tyr	Thr	Leu	Ala	Asp	Gly
		675					680					685			
Thr	Ser	Ser	Trp	Asp	Ala	Arg	Tyr	Lys	Gly	Phe	Ser	Gln	Leu	Ser	Ala
	690					695					700				
Gln	Val	Thr	Arg	Tyr	Phe	Arg	Arg	Trp	Ser	Ile	Tyr	Ile	Gly	Gly	Glu
705					710					715					720
Asn	Leu	Thr	Asn	Phe	Lys	Gln	Lys	Asn	Pro	Ile	Ile	Asp	Ala	Ala	Asp
			725						730					735	
Pro	Trp	Gly	Asp	Arg	Phe	Asp	Ser	Thr	Met	Ile	Trp	Gly	Pro	Val	His
		740						745					750		
Gly	Ala	Lys	Gly	Tyr	Ile	Gly	Val	Arg	Phe	Asn	Leu	Ala	Arg	Asp	
		755					760					765			

<210> 8635

<211> 190

<212> PRT

<213> B.fragilis

<400> 8635

Ile	Met	Lys	Thr	Asn	Glu	Val	Leu	Glu	Thr	Ile	Lys	Ala	Arg	Arg	Ser
1				5					10					15	
Val	Arg	Ala	Tyr	Asp	Arg	Lys	Gln	Ile	Pro	Ala	Asp	Asp	Leu	Asn	Ala
		20						25					30		
Ile	Leu	Glu	Ala	Gly	Ala	Tyr	Ala	Pro	Ser	Gly	Met	His	Tyr	Glu	Thr
		35					40					45			
Trp	His	Phe	Thr	Ala	Val	Cys	Asn	Thr	Val	Lys	Leu	Glu	Glu	Leu	Asn
	50					55					60				
Glu	Arg	Ile	Lys	Gly	Ala	Phe	Ala	Lys	Ser	Asp	Asp	Lys	His	Leu	Arg
65				70						75					80
Glu	Arg	Gly	His	Ser	Glu	Thr	Tyr	Cys	Cys	Tyr	Tyr	His	Ala	Pro	Thr
			85						90					95	
Leu	Val	Ile	Val	Ser	Asn	Glu	Pro	Lys	Gln	Trp	Trp	Ala	Gly	Met	Asp
			100					105					110		
Cys	Ala	Cys	Ala	Ile	Glu	Asn	Met	Phe	Leu	Ala	Ala	Thr	Ser	Leu	Gly

115		120		125
Ile Ala Ser Cys Trp	Ile Asn Gln Leu Gly Thr	Thr Cys Asp Asp Pro		
130	135	140		
Glu Val Arg Ala Tyr	Leu Thr Ser Leu Gly Val	Pro Glu Asn His Lys		
145	150	155		160
Val Tyr Gly Cys Val	Ala Leu Gly Tyr Lys	Ala Glu Gly Ala Leu Leu		
	165	170		175
Lys Glu Lys Thr Val	Lys Ala Gly Thr	Ile Thr Ile Val Glu		
180	185	190		

<210> 8636
 <211> 240
 <212> PRT
 <213> B.fragilis

<400> 8636	
Ile Glu Phe Ala Lys Met Ile Arg Ser Lys Met Lys Ser Thr Trp Met	
1	5 10 15
Leu Gly Leu Leu Leu Leu Leu Gly Ser Cys Gln Gln Lys Gly Pro Ala	
	20 25 30
Ser Gly Arg Ala Glu Met Lys Gly Glu Ser Asp Ser Leu Ser Val Arg	
	35 40 45
His Gly Gln Glu Asn Ala Leu Ser Val Ser Asp Glu Tyr Pro Glu Gly	
	50 55 60
Tyr Val Pro Val Pro Gly Ile Arg Tyr Gln Ala Asn Tyr Leu Thr Gly	
65	70 75 80
Asn Pro Glu Arg Leu Asp Val Lys Ala Ala Leu Arg Asn Val Arg Pro	
	85 90 95
Leu Lys Leu Ser Gln Leu Gly Ser Gln Leu Asp Phe Met Val Phe Lys	
	100 105 110
Asp Val Lys Gly Gly Ile Phe Arg Leu Ile Pro Ile Glu Glu Gly Cys	
	115 120 125
Leu Gly Val Gly Ile Gly Gly Ile Trp Leu Leu Asp Gly Asn Leu Lys	
	130 135 140
Met Ile Arg Met Leu Phe Arg Asn Asp Val Asp Ile Thr Glu Glu Asn	
145	150 155 160
Gly Phe Thr Asn Phe Gln Thr Lys Arg Tyr Ile Asn Pro Asp Tyr Tyr	
	165 170 175
Glu Lys Ser Ser Arg Thr Leu Ile Gly Val Leu Tyr Asp Gln Arg Asp	
	180 185 190
Lys Lys Asn Pro Lys Ser Phe Val Arg Leu Ser Leu Lys Asp Leu Leu	
	195 200 205
Ser Ala Ser Arg Pro Leu Thr Pro Asp Asp Ile His Lys Arg Ala Gly	
	210 215 220
Ser Ser Pro Arg Gly Trp Lys Asn Ala Ala Ser Ser Gln Leu Lys Pro	
225	230 235 240

<210> 8637
 <211> 305
 <212> PRT
 <213> B.fragilis

<400> 8637	
Tyr Glu Leu Tyr Leu Ser Ile Val Asn Asp Tyr Ile Asn Val Glu Phe	
1	5 10 15
Lys Glu Glu Pro Leu Met Lys Lys Gln Tyr Val Ser Leu Leu Ala Ile	
	20 25 30
Ile Leu Ala Thr Ser Gly Phe Leu Phe Ser Cys Gly Asp Lys Met Asn	
	35 40 45

Lys Asn Thr Gly Ala Leu Glu Phe Asp Ser Ile Gln Val Asn Glu Thr
 50 55 60
 Ala His Leu Phe Gly Asp Thr Ala Lys Pro Ala Cys Asn Leu Thr Ile
 65 70 75 80
 Asn Phe Ala Tyr Pro Val Lys Ser Thr Asp Asn Lys Leu Lys Asp Ser
 85 90 95
 Leu Asn Ser Tyr Phe Ile Ala Ala Cys Phe Gly Glu Gly Tyr Ile Gly
 100 105 110
 Glu Lys Pro Ala Gln Val Val Lys Glu Tyr Thr Glu His Tyr Val Lys
 115 120 125
 Glu Tyr Arg Thr Asp Leu Glu Pro Met Tyr Ala Glu Asp Glu Lys Asn
 130 135 140
 Lys Glu Ser Glu Gly Ser Ile Gly Ala Trp Tyr Ser Tyr Tyr Lys Gly
 145 150 155 160
 Ile Glu Ser His Val Gln Leu Tyr Tyr Lys Asn Leu Leu Val Tyr Arg
 165 170 175
 Ile Asn Tyr Asn Glu Tyr Thr Gly Gly Ala His Gly Ile Tyr Met Thr
 180 185 190
 Thr Phe Leu Asn Met Asp Leu Ile Asn Leu Arg Pro Leu Lys Leu Asp
 195 200 205
 Asp Ile Phe Thr Gly Asp Tyr Lys Glu Ala Leu Thr Asp Leu Leu Trp
 210 215 220
 Asn Gln Leu Met Ala Asp Lys Lys Val Thr Thr His Glu Ala Leu Glu
 225 230 235 240
 Asp Met Gly Tyr Gly Ser Thr Gly Asp Ile Ala Pro Thr Glu Asn Phe
 245 250 255
 Tyr Leu Asp Lys Asp Gly Ile Thr Phe Tyr Tyr Asn Val Tyr Asp Ile
 260 265 270
 Thr Pro Tyr Ala Met Gly Pro Val Glu Ile Lys Ile Pro Tyr Glu Met
 275 280 285
 Met Glu His Met Leu Gly Ser Asn Pro Ile Ile Gly Glu Met Lys Ser
 290 295 300

Lys
 305

<210> 8638
 <211> 671
 <212> PRT
 <213> B.fragilis

<400> 8638

Thr Ile His Lys Leu Gln Lys Thr Ile Met Lys Gln Glu Glu Asp Lys
 1 5 10 15
 Phe Thr Gly Leu Pro Glu Asn Ala Phe Arg Glu Leu Lys Pro Gly Glu
 20 25 30
 Val Tyr Asn Pro Leu Met Ser Pro Lys Lys Thr Tyr Pro Glu Val Asn
 35 40 45
 Leu Trp Ser Val Ala Trp Gly Ile Ala Met Ala Ile Leu Phe Ser Ala
 50 55 60
 Ala Ala Ala Tyr Leu Gly Leu Lys Val Gly Gln Val Phe Glu Ala Ala
 65 70 75 80
 Ile Pro Ile Ala Ile Ala Val Gly Val Ser Gly Ala Ala Lys Arg
 85 90 95
 Lys Asn Ala Leu Gly Glu Asn Val Ile Ile Gln Ser Ile Gly Ala Cys
 100 105 110
 Ser Gly Val Ile Val Ala Gly Ala Ile Phe Thr Leu Pro Ala Leu Tyr
 115 120 125
 Ile Leu Gln Ala Lys Tyr Pro Asp Met Ser Val Thr Phe Met Gln Val
 130 135 140

Phe	Ile	Ser	Ser	Leu	Leu	Gly	Gly	Val	Leu	Gly	Ile	Leu	Phe	Leu	Ile
145					150					155					160
Pro	Phe	Arg	Lys	Tyr	Phe	Val	Ser	Asp	Met	His	Gly	Lys	Tyr	Pro	Phe
				165					170						175
Pro	Glu	Ala	Thr	Ala	Thr	Thr	Gln	Val	Leu	Val	Ser	Gly	Glu	Lys	Gly
			180					185							190
Gly	Ser	Gln	Ala	Lys	Pro	Leu	Leu	Met	Ala	Gly	Leu	Ile	Gly	Gly	Leu
		195					200					205			
Tyr	Asp	Phe	Ile	Val	Ala	Thr	Phe	Gly	Trp	Trp	Asn	Glu	Asn	Phe	Thr
	210					215					220				
Thr	Arg	Val	Cys	Gly	Val	Gly	Glu	Met	Leu	Ala	Asp	Lys	Ala	Lys	Leu
225					230					235					240
Val	Phe	Lys	Val	Asn	Thr	Gly	Ala	Ala	Val	Leu	Gly	Leu	Gly	Tyr	Ile
				245					250						255
Val	Gly	Leu	Lys	Tyr	Ala	Ser	Ile	Ile	Cys	Phe	Gly	Ser	Leu	Ala	Val
			260					265							270
Trp	Trp	Ile	Ile	Val	Pro	Gly	Met	Ser	Leu	Phe	Phe	Gly	Asp	Ser	Val
		275					280						285		
Leu	Asn	Gln	Trp	Asn	Pro	Asp	Ile	Thr	Ala	Thr	Val	Gly	Ser	Met	Ser
	290					295						300			
Pro	Glu	Gln	Ile	Phe	Ser	His	Tyr	Ala	Lys	Ser	Ile	Gly	Ile	Gly	Gly
305					310					315					320
Ile	Ala	Met	Ala	Gly	Val	Ile	Gly	Ile	Ile	Lys	Ser	Trp	Ser	Ile	Ile
				325					330						335
Arg	Ser	Ala	Val	Gly	Leu	Ala	Ala	Lys	Glu	Met	Gly	Gly	Lys	Ser	Asp
			340					345							350
Ala	Glu	Lys	Asn	Ile	Ile	Arg	Thr	Gln	Arg	Asp	Leu	Ser	Met	Lys	Ile
		355					360						365		
Ile	Ala	Ile	Gly	Ser	Ile	Ile	Thr	Leu	Ile	Leu	Val	Val	Leu	Phe	Phe
	370					375					380				
Tyr	Phe	Asp	Val	Met	Gln	Gly	Asn	Leu	Val	His	Thr	Leu	Val	Ala	Ile
385					390					395					400
Leu	Leu	Val	Ala	Gly	Ile	Ser	Phe	Leu	Phe	Thr	Thr	Val	Ala	Ala	Asn
				405					410						415
Ala	Ile	Ala	Ile	Val	Gly	Thr	Asn	Pro	Val	Ser	Gly	Met	Thr	Leu	Met
			420					425					430		
Thr	Leu	Ile	Leu	Ala	Ser	Val	Val	Met	Val	Ala	Val	Gly	Leu	Lys	Gly
		435					440						445		
Pro	Ser	Gly	Met	Val	Ala	Ser	Leu	Val	Met	Gly	Gly	Val	Val	Cys	Thr
						455					460				
Ala	Leu	Ser	Met	Ala	Gly	Gly	Phe	Ile	Thr	Asp	Leu	Lys	Ile	Gly	Tyr
465					470					475					480
Trp	Leu	Gly	Ser	Thr	Pro	Ala	Lys	Gln	Glu	Ala	Trp	Lys	Phe	Leu	Gly
				485					490						495
Thr	Ile	Val	Ser	Ala	Ala	Thr	Val	Gly	Gly	Val	Met	Ile	Ile	Leu	Asn
			500					505							510
Lys	Thr	Tyr	Gly	Phe	Thr	Ser	Gly	Gln	Leu	Ala	Ala	Pro	Gln	Ala	Asn
		515					520								525
Ala	Met	Ala	Ala	Val	Ile	Glu	Pro	Leu	Met	Ser	Gly	Val	Gly	Ala	Pro
	530					535					540				
Trp	Met	Leu	Tyr	Gly	Ile	Gly	Ala	Val	Leu	Ala	Ile	Val	Leu	Thr	Leu
545					550					555					560
Leu	Lys	Val	Pro	Ala	Leu	Ala	Phe	Ala	Leu	Gly	Met	Phe	Ile	Pro	Leu
				565					570						575
Glu	Leu	Asn	Ile	Pro	Leu	Val	Val	Gly	Gly	Ala	Ile	Asn	Trp	Tyr	Val
			580					585					590		
Thr	Thr	Arg	Ser	Lys	Asp	Ala	Ser	Leu	Asn	Thr	Glu	Arg	Gly	Glu	Lys
		595				600						605			
Gly	Thr	Leu	Leu	Ala	Ser	Gly	Phe	Ile	Ala	Gly	Gly	Ala	Leu	Met	Gly

145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590 595 600 605

[illegible]

<400>	8639															
Ile	Ile	Asn	Asn	Met	Lys	Thr	Asp	Leu	Leu	Ala	Cys	Arg	His	Ile	Gly	
1				5					10					15		
Val	Asn	Lys	Ala	Asp	Ala	Glu	Val	Met	Leu	Arg	Lys	Ile	Gly	Val	Ala	
			20					25					30			
Ser	Leu	Asp	Glu	Leu	Ile	Asp	Lys	Thr	Ile	Pro	Ala	Asn	Ile	Arg	Leu	
		35					40					45				
Lys	Ala	Pro	Leu	Ala	Leu	Pro	Ala	Pro	Met	Thr	Glu	Tyr	Glu	Phe	Ala	
	50					55					60					
Arg	His	Ile	Ala	Glu	Leu	Ala	Gly	Lys	Asn	Lys	Leu	Phe	Thr	Thr	Tyr	
65					70					75					80	
Ile	Gly	Met	Gly	Trp	Tyr	Asn	Thr	Ile	Thr	Pro	Ala	Val	Ile	Gln	Arg	
				85					90					95		
Asn	Val	Phe	Glu	Asn	Pro	Val	Trp	Tyr	Thr	Ser	Tyr	Thr	Pro	Tyr	Gln	
			100					105					110			
Thr	Glu	Val	Ser	Gln	Gly	Arg	Leu	Glu	Ala	Leu	Met	Asn	Phe	Gln	Thr	
		115					120					125				
Ala	Val	Cys	Asp	Leu	Thr	Ala	Met	Pro	Leu	Ala	Asn	Cys	Ser	Leu	Leu	
	130					135					140					
Asp	Glu	Ala	Thr	Ala	Ala	Ala	Glu	Ala	Val	Thr	Met	Met	Tyr	Gly	Leu	
145					150					155					160	
Arg	Ser	Arg	Asn	Gln	Gln	Lys	Ala	Gly	Ala	Asn	Val	Val	Phe	Ile	Asp	
				165					170					175		
Glu	Asn	Ile	Phe	Pro	Gln	Thr	Leu	Ala	Val	Ile	Thr	Thr	Arg	Ala	Ile	
			180					185					190			
Pro	Gln	Gly	Ile	Glu	Ile	Arg	Thr	Gly	Lys	Phe	Arg	Asp	Leu	Glu	Phe	
		195					200					205				
Thr	Asp	Asp	Phe	Phe	Ala	Cys	Val	Leu	Gln	Tyr	Pro	Asn	Ala	Asn	Gly	
	210					215					220					
Asn	Ala	Glu	Asp	Tyr	Arg	Glu	Phe	Thr	Glu	Lys	Ala	His	Thr	Ala	Asn	
225					230					235					240	
Cys	Lys	Val	Ala	Val	Ala	Ala	Asp	Ile	Leu	Ser	Leu	Ala	Leu	Leu	Thr	
				245					250					255		
Pro	Pro	Gly	Glu	Trp	Gly	Ala	Asp	Ile	Val	Phe	Gly	Thr	Thr	Gln	Arg	
			260					265					270			
Leu	Gly	Thr	Pro	Met	Phe	Tyr	Gly	Gly	Pro	Ser	Ala	Gly	Tyr	Phe	Ala	
		275					280					285				
Thr	Arg	Asp	Glu	Tyr	Lys	Arg	Asn	Met	Pro	Gly	Arg	Ile	Ile	Gly	Trp	
	290					295					300					
Ser	Lys	Asp	Lys	Tyr	Gly	Lys	Leu	Cys	Tyr	Arg	Met	Ala	Leu	Gln	Thr	
305					310					315						

[illegible]

Met Asp Tyr Gly Tyr His Ala Pro Thr Leu Ser Phe Pro Val His Gly
 835 840 845
 Thr Leu Met Ile Glu Pro Thr Glu Ser Glu Ser Leu Ser Glu Leu Asp
 850 855 860
 Asn Phe Val Leu Thr Met Leu Thr Ile Trp Asn Glu Ile Gln Glu Val
 865 870 875 880
 Lys Asn Gly Glu Ala Asp Lys Glu Asp Asn Val Leu Ile Asn Ala Pro
 885 890 895
 His Pro Glu Tyr Glu Val Val Ser Asp Gln Trp Glu His Cys Tyr Thr
 900 905 910
 Arg Glu Lys Ala Ala Tyr Pro Ile Glu Ser Val Arg Glu Asn Lys Phe
 915 920 925
 Trp Val Asn Val Ala Arg Val Asp Asn Thr Leu Gly Asp Arg Lys Leu
 930 935 940
 Leu Pro Thr Cys Tyr Gly Cys Phe Asp
 945 950

<210> 8640

<211> 737

<212> PRT

<213> B.fragilis

<400> 8640

Ile Met Ser Asn Ile Thr Lys Lys Ala Phe Pro Val Leu Asn Met His
 1 5 10 15
 Cys Ala Gly Cys Ala Asn Asn Val Glu Lys Thr Val Lys Lys Leu Ala
 20 25 30
 Gly Val Val Asp Ala Ser Val Asn Phe Ala Thr Asn Thr Leu Ser Val
 35 40 45
 Ser Tyr Glu Ala Asp Lys Leu Thr Pro Gly Glu Ile Arg Ala Ala Val
 50 55 60
 Leu Ala Ala Gly Tyr Asp Leu Ile Val Glu Glu Ala Leu Lys Glu Glu
 65 70 75 80
 Arg Gln Glu Glu Ala Gln Glu Lys His Tyr Arg Leu Leu Lys Arg Gln
 85 90 95
 Val Ile Gly Ala Trp Ile Phe Val Val Pro Met Leu Leu Phe Ser Met
 100 105 110
 Val Leu Met His Val Pro Phe Ser Asn Glu Ile Gln Leu Ile Leu Ala
 115 120 125
 Leu Pro Val Met Ile Phe Phe Gly Gly Ser Phe Tyr Val Asn Ala Trp
 130 135 140
 Arg Gln Ala Arg Leu Gly Arg Ser Asn Met Asp Thr Leu Val Ala Leu
 145 150 155 160
 Ser Thr Ser Ile Ala Phe Leu Phe Ser Val Phe Asn Thr Phe Phe Pro
 165 170 175
 Glu Phe Trp Tyr Ser Arg Gly Leu Glu Pro His Val Tyr Tyr Glu Ala
 180 185 190
 Ala Val Val Ile Ile Ala Phe Val Leu Thr Gly Lys Leu Met Glu Glu
 195 200 205
 Arg Ala Lys Gly Asn Thr Ser Thr Ala Ile Arg Lys Leu Met Gly Leu
 210 215 220
 Gln Pro Arg Val Ala Arg Val Leu Arg Glu Gly Ile Glu Glu Asp Ile
 225 230 235 240
 Leu Ile Asp Gln Leu Gln Thr Gly Asp Leu Val Val Val Arg Pro Gly
 245 250 255
 Glu Gln Ile Pro Val Asp Gly Arg Leu Ser Glu Gly Glu Ser Tyr Val
 260 265 270
 Asp Glu Ser Met Ile Ser Gly Glu Pro Ile Pro Val Glu Lys Lys Val
 275 280 285

Gly Asp Arg Val Leu Ala Gly Thr Ile Asn Gln Lys Gly Ala Phe Val
 290 295 300
 Ile Lys Ala Ser Gly Val Gly Ser Glu Thr Val Leu Ala Arg Ile Ile
 305 310 315 320
 Arg Met Val Gln Glu Ala Gln Gly Ser Lys Ala Pro Val Gln Arg Ile
 325 330 335
 Val Asp Arg Val Thr Gly Ile Phe Val Pro Val Val Leu Cys Ile Ala
 340 345 350
 Val Leu Thr Phe Val Ile Trp Leu Leu Val Gly Gly Thr Asp Tyr Phe
 355 360 365
 Ser His Ala Leu Leu Ser Ala Val Ser Val Leu Val Ile Ala Cys Pro
 370 375 380
 Cys Ala Leu Gly Leu Ala Thr Pro Thr Ala Leu Met Val Gly Ile Gly
 385 390 395 400
 Lys Ala Ala Ser Asn His Ile Leu Ile Lys Asp Ala Val Ala Leu Glu
 405 410 415
 Gln Met Arg Lys Val Asp Val Val Val Leu Asp Lys Thr Gly Thr Leu
 420 425 430
 Thr Glu Gly His Pro Thr Val Ser Gly Trp Leu Trp Ala Gln Val Gln
 435 440 445
 Glu Glu His Phe Lys Asn Val Leu Leu Ala Ala Glu Leu Lys Ser Glu
 450 455 460
 His Pro Leu Ala Gly Ala Ile Val Ser Ser Leu Gln Glu Val Glu Lys
 465 470 475 480
 Ile Val Pro Ala Gln Leu Glu Ser Phe Glu Ser Ile Thr Gly Lys Gly
 485 490 495
 Ile Lys Val Val Tyr Gln Gly Asp Thr Tyr Trp Val Gly Ser His Lys
 500 505 510
 Leu Leu Lys Asp Phe Ser Ala Ser Leu Ser Asp Val Leu Ala Glu Met
 515 520 525
 Met Val Gln Tyr Glu Ser Asp Gly Asn Ser Ile Val Tyr Phe Gly Arg
 530 535 540
 Gly Thr Glu Val Leu Ala Val Val Ala Ile Ala Asp Gln Ile Lys Pro
 545 550 555 560
 Thr Ser Ala Glu Ala Val Lys Glu Leu Lys Arg Gln Gly Ile Asp Ile
 565 570 575
 Cys Met Leu Thr Gly Asp Gly Gln Arg Thr Ala Leu Ala Val Ser Gly
 580 585 590
 Lys Leu Gly Ile Asp Arg Phe Val Ala Asp Ala Leu Pro Asp Asp Lys
 595 600 605
 Glu Glu Phe Val Arg Glu Leu Gln Met Gln Gly Lys Thr Val Ala Met
 610 615 620
 Val Gly Asp Gly Ile Asn Asp Ser Gln Ala Leu Ala Leu Ala Asp Val
 625 630 635 640
 Ser Ile Ala Met Gly Lys Gly Thr Asp Ile Ala Met Asp Val Ala Met
 645 650 655
 Val Thr Leu Met Thr Ser Asp Leu Leu Leu Leu Pro Arg Ala Phe Glu
 660 665 670
 Leu Ser Lys Gln Thr Val Lys Leu Ile His Gln Asn Leu Phe Trp Ala
 675 680 685
 Phe Ile Tyr Asn Leu Ile Gly Ile Pro Ile Ala Ala Gly Ile Leu Phe
 690 695 700
 Pro Val Asn Gly Leu Leu Leu Asn Pro Met Leu Ala Ser Ala Ala Met
 705 710 715 720
 Ala Phe Ser Ser Val Ser Val Val Leu Asn Ser Leu Ser Leu Ala Arg
 725 730 735
 Lys

<210> 8641
 <211> 214
 <212> PRT
 <213> B.fragilis

<400> 8641

Phe Val Arg Lys Arg Ala Val Phe Val Arg Tyr Arg Thr Gln Ile Thr
 1 5 10 15
 Gln Thr Phe Ser Leu Ser Leu Ser Cys Gln Ser Thr Tyr Tyr Thr Met
 20 25 30
 Thr Leu Lys Arg Gly Lys Ile Leu Ile Ala Asp Asp Asn Glu Asp Ile
 35 40 45
 Leu Phe Thr Leu Lys Met Leu Leu Arg Pro Ile Ala Glu Ser Ile Ser
 50 55 60
 Ile Thr Thr Asp Pro Arg Glu Leu Leu Pro Ile Leu Ser Arg Thr His
 65 70 75 80
 Tyr Asp Val Ile Leu Leu Asp Met Asn Phe Arg Asn Asp Ala Val Ser
 85 90 95
 Gly Arg Glu Gly Phe His Trp Leu Glu Glu Ile Leu Lys Leu Asp Ser
 100 105 110
 Gly Ala Val Val Ile Phe Ile Thr Ala Tyr Ala Asp Thr Glu Lys Ala
 115 120 125
 Val Arg Thr Ile Lys Leu Gly Ala Thr Asp Phe Ile Ala Lys Pro Trp
 130 135 140
 Gln Asn Asp Lys Met Ile Ala Thr Arg Ile Cys Gly Ile Ala Thr Gln
 145 150 155 160
 Leu Gln Pro Tyr Gly Ser Arg Ile Thr Glu Gly Ala Glu Arg Ser Ser
 165 170 175
 Asp Arg Pro Leu Ala Gly Thr Gly Pro Asn His Arg Arg Ile Gly Arg
 180 185 190
 His Ala Gly Tyr Phe Pro Asp His Pro Glu Ile Cys Arg Tyr Gly Arg
 195 200 205
 Gln Ser Val Ala Phe Arg
 210

<210> 8642
 <211> 132
 <212> PRT
 <213> B.fragilis

<400> 8642

Lys Met Lys Lys Ile Leu Phe Phe Ile Thr Met Met Val Leu Ser Ile
 1 5 10 15
 Gly Leu Ala Gln Ala Gln Gly Lys Ala Glu Ile Lys Phe Asp Lys Thr
 20 25 30
 Thr His Asp Phe Gly Thr Phe Ser Glu Asn Asn Pro Val Val Ser Cys
 35 40 45
 Thr Phe Lys Phe Thr Asn Ile Gly Asp Ala Pro Leu Val Ile His Gln
 50 55 60
 Ala Val Ala Ser Cys Gly Cys Thr Val Pro Glu Tyr Thr Gln Glu Pro
 65 70 75 80
 Ile Met Pro Gly Lys Thr Gly Thr Ile Lys Val Thr Tyr Asn Gly Thr
 85 90 95
 Asp Lys Tyr Pro Gly His Phe Lys Lys Ser Ile Thr Leu Arg Thr Asn
 100 105 110
 Ala Lys Thr Glu Met Ile Arg Leu Phe Val Glu Gly Asp Met Thr Ala
 115 120 125
 Lys Asp Ala Lys
 130

<210> 8643
 <211> 318
 <212> PRT
 <213> B.fragilis

<400> 8643

Arg Val Ala Glu Gln His Ser Val Ser Thr Cys Gly Pro Asp Ser Leu
 1 5 10 15
 Tyr Pro Val Asp Ser Leu Phe His Gln Ser Ile His Glu Ser Lys Met
 20 25 30
 Lys Thr Leu Ile Thr Ser Ile Leu Phe Met Ala Thr Gly Leu Ser
 35 40 45
 Ala Gln Lys Pro Val Glu Leu Pro Leu Trp Pro Asn Gly Ala Pro Asn
 50 55 60
 Asp Asn Gly Leu Lys Gly Glu Glu Val Met Ser Ala Pro Tyr Arg Leu
 65 70 75 80
 Thr Asn Val Thr Gln Pro Thr Ile Thr Val Tyr Arg Pro Ala Thr Pro
 85 90 95
 Asn Gly Met Thr Ile Ile Met Cys Pro Gly Gly Ala Tyr Ala Leu Leu
 100 105 110
 Ala Met Asp His Glu Gly His Asp Met Ala Pro Trp Phe Asn Ser Leu
 115 120 125
 Gly Ile Thr Tyr Val Val Leu Lys Tyr Arg Met Pro Asn Gly His Cys
 130 135 140
 Glu Val Pro Leu Ser Asp Ala Glu Gln Ala Ile Arg Ile Val Arg Lys
 145 150 155 160
 His Ala Lys Asp Trp Asn Ile Arg Thr Asp Arg Val Gly Ile Met Gly
 165 170 175
 Ala Ser Ala Gly Gly His Leu Ala Ser Thr Leu Ala Thr His Tyr Ser
 180 185 190
 Ser Glu Asp Thr Arg Pro Asp Phe Gln Ile Leu Leu Tyr Pro Val Ile
 195 200 205
 Thr Met Glu Ser Gly Asp Thr His Gly Gly Ser Arg His Asn Leu Leu
 210 215 220
 Gly Pro Asp Ala Thr Pro Glu Leu Thr Arg Lys Phe Ser Asn Glu Gln
 225 230 235 240
 Gln Val Thr Asp His Thr Pro Gln Ala Phe Ile Thr Leu Ser Ser Asp
 245 250 255
 Asp Glu Gly Val Pro Pro Ala Asn Gly Val Asn Tyr Tyr Leu Ala Leu
 260 265 270
 Gln Lys His Lys Val Pro Ala Thr Leu His Ile Tyr Pro Thr Gly Gly
 275 280 285
 His Gly Trp Gly Phe Tyr Asp Ser Phe Ala Tyr Lys Arg Gln Trp Thr
 290 295 300
 Glu Glu Leu Glu Lys Trp Leu Arg Asp Gly Val Arg Phe Gln
 305 310 315

<210> 8644
 <211> 145
 <212> PRT
 <213> B.fragilis

<400> 8644

Leu Asp His Asp Met Gly Ala Gly Ser Trp Ser Glu Arg Leu Tyr Arg
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 Ser Gln Val Gln Ser Gly Glu Arg Leu Arg Ile Lys Ser Asp Arg Ser
 20 25 30
 Gln Asn Leu Ser Ile Leu Ile Leu Thr Phe Met Lys Thr Lys Lys Met

35 40 45
 Ile Ala Thr Leu Val Val Ala Leu Leu Ser Val Thr Ala Val Met Ala
 50 55 60
 Lys Asp Phe Arg Thr Val Val Phe Lys Val Ala Gln Met Glu Cys Ala
 65 70 75 80
 Asn Cys Glu Arg Lys Val Lys Asn Asn Ile Lys Phe Glu Lys Gly Leu
 85 90 95
 Lys Asn Phe Thr Thr Asp Leu Lys Glu Arg Thr Val Thr Ile Thr Tyr
 100 105 110
 Asp Ala Glu Lys Thr Asn Val Glu Lys Leu Lys Glu Gly Phe Arg Lys
 115 120 125
 Phe Lys Tyr Glu Ala Val Val Ile Lys Glu Ala Lys Glu Thr Asp Lys
 130 135 140
 Lys
 145

<210> 8645
 <211> 106
 <212> PRT
 <213> B.fragilis

<400> 8645
 Ala Phe Thr Glu Tyr Ala Tyr Val Phe Ser Asn Tyr Leu Tyr Met Phe
 1 5 10 15
 Ser Tyr Phe Thr Ser Ile Val Arg Val Ser Glu Val Lys Arg Lys Arg
 20 25 30
 Leu Phe Ser Gly Cys Thr Pro Glu Ala Asp Lys Ser Glu Leu Thr Glu
 35 40 45
 Arg Glu Pro His Ala Leu Ile Thr His Leu Phe Ile Pro Ile Ala Ser
 50 55 60
 Arg His Arg His Tyr Asp Ser Leu Gln Arg His Leu Ile Ser Lys Thr
 65 70 75 80
 Lys Ser Pro Thr Arg Lys Glu Gly Asp Phe Ile Arg Ser Val His His
 85 90 95
 Trp Ala Glu Ile Glu Gln Ser Arg Glu Val
 100 105

<210> 8646
 <211> 282
 <212> PRT
 <213> B.fragilis

<400> 8646
 Arg Asn Gly Cys Gly Thr Glu Ser Gly Ser Asn Arg Tyr Asn Glu Gly
 1 5 10 15
 Ile Thr Lys Thr Ile Phe Ile Lys Met Lys Thr Ile Arg Thr Leu Leu
 20 25 30
 Leu Cys Thr Ser Leu Leu Ala Gly Thr Val Ala Ala Gln Glu Ser Ser
 35 40 45
 Leu Val Leu Ser Asn Gly Leu Gly Phe Val Asp Thr Pro Tyr Lys Ala
 50 55 60
 Gly Thr Leu Glu Val Asp Asp Thr Glu Asp Leu Ile Ile Asn Cys Asp
 65 70 75 80
 Glu Val Asp Cys Thr Phe Val Glu Tyr Ala Leu Ala Met Ala Leu
 85 90 95
 Cys Pro Gln Gln Gly Asp Glu Met Gln Glu Gly Asp Phe Ala Arg Asn
 100 105 110
 Leu Gln Arg Ile Arg Tyr Arg Asp Gly Lys Ile Asp Gly Tyr Thr Ser
 115 120 125

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<210> 8647
<211> 467
<212> PRT
<213> B.fragilis
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Arg	Asn	Thr	Asp	Tyr	Asn	Leu	Lys	Gln	Leu	His	Asp	Met	Lys	Gln	Lys
			20					25					30		
Trp	Ala	Arg	Lys	Pro	Leu	Ile	Leu	Thr	Ala	Ala	Leu	Leu	Ile	Cys	Cys
		35					40					45			
Tyr	Thr	Thr	Val	Trp	Leu	Gly	Met	His	Gly	Phe	Tyr	Ile	Ser	Leu	Pro
	50					55				60					
Val	Ser	Val	Cys	Leu	Leu	Leu	Tyr	Thr	Ala	Tyr	Arg	Ile	Tyr	Arg	Tyr
65				70					75					80	
Ile	Leu	Arg	Ser	Thr	Arg	Ala	Met	Ala	Gln	Phe	Ile	Trp	Ser	Val	Arg
				85					90					95	
Tyr	Ser	Glu	Phe	Leu	Ser	Ser	Pro	Val	Gln	Ser	Glu	Glu	Ser	Leu	Arg
		100						105					110		
Ser	Leu	Pro	Ala	Glu	Leu	Leu	Asn	Glu	Met	Asn	Gln	Ala	Leu	Asp	Phe
		115					120					125			
Tyr	Lys	Gln	Asn	Leu	Gln	Lys	Lys	Glu	Ser	Lys	Leu	Gln	Tyr	Phe	Gln
	130					135					140				
Ala	Leu	Ala	Asn	His	Ile	Asp	Met	Ser	Val	Leu	Val	Tyr	Thr	Pro	Ser
145				150						155				160	
Gly	Arg	Ile	Glu	Trp	Met	Asn	Glu	Ala	Ala	Lys	Arg	Leu	Leu	Asp	Asn
				165					170					175	
His	Asn	Leu	Lys	Ser	Ile	Asp	Glu	Leu	Lys	Tyr	Phe	His	Ser	Glu	Leu
		180						185					190		
Pro	Ala	Arg	Leu	Tyr	Ser	Leu	Lys	Ala	Gly	Asp	Ile	Ala	Val	Leu	Gln
		195					200					205			
Ala	Lys	Lys	Glu	Glu	Glu	Thr	Ile	Gln	Leu	Ala	Leu	Ser	Gly	Met	Glu
	210					215					220				
Phe	Val	Ile	Gln	Gly	Arg	Pro	Leu	Thr	Val	Ala	Ser	Met	Lys	Asn	Ile
225				230						235				240	
His	Ser	Val	Leu	Asp	Ser	Gln	Glu	Thr	Glu	Ala	Trp	Gln	Lys	Leu	Ile
				245					250					255	

[illegible]

Arg Val Leu Thr His Glu Ile Met Asn Ser Ile Thr Pro Val Thr Ser
 260 265 270
 Leu Ser Glu Leu Leu Glu His Gln Ile Glu Asp Phe Asp Gly Asn Glu
 275 280 285
 Glu Glu Arg Ala Glu Ile Arg Arg Met Leu Gln Thr Ile Arg Arg Arg
 290 295 300
 Gly Asp Gly Leu Ile Arg Phe Val Asn Ser Tyr Arg Glu Val Ser His
 305 310 315 320
 Leu Pro Gln Pro Leu Leu Lys Ile Tyr Thr Ser Gln Glu Leu Leu Thr
 325 330 335
 Gly Val Val Arg Leu Met Tyr Arg Glu Pro Asn Asp Leu His Leu Ile
 340 345 350
 Leu Pro Pro Lys Gly Gln Arg Leu Met Ala Asp Lys Asp Leu Ile Glu
 355 360 365
 Gln Val Leu Ile Asn Leu Ile Lys Asn Ala Arg Glu Asn Asp Ala Thr
 370 375 380
 Asp Ile Arg Ile Ser Ala Gly Leu Ser Ser Gly Glu Arg Pro Tyr Ile
 385 390 395 400
 Arg Ile Glu Asp Asn Gly Thr Gly Ile Glu Gln Glu Val Leu Asp Arg
 405 410 415
 Ile Phe Ile Pro Phe Phe Thr Thr Lys Pro Thr Gly Ser Gly Ile Gly
 420 425 430
 Leu Thr Ile Ser Arg Gln Ile Ile His Leu His Arg Gly Thr Ile Thr
 435 440 445
 Val Ser Ser Glu Pro Gly Lys Gly Ser Ile Phe Thr Leu Leu Phe Pro
 450 455 460
 Gly Val Phe
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<210> 8648

<211> 282

<212> PRT

<213> B.fragilis

<400> 8648

Gln Arg Cys Arg Leu Ser Ala Cys Met Ile Val Cys Arg Tyr Leu Ile
 1 5 10 15
 Tyr Pro Arg Leu His His Ser Met Pro Lys Ser Arg Thr Glu Asp Leu
 20 25 30
 Leu Val Glu Ser Gln Thr Ser Tyr Phe Leu Phe Leu Asn His Ala
 35 40 45
 Asn Ile His Ile Phe Phe Tyr Phe Phe Ile Phe Val Leu Met Lys Thr
 50 55 60
 Ile Thr Thr Asp Trp Glu Leu Ile Pro Tyr Ser Glu Ala Trp Ser Arg
 65 70 75 80
 Gln Thr Glu Trp Phe Asp Ala Leu Val His Ala Lys Gln Asn Gly Glu
 85 90 95
 Ser Tyr Glu Asn Arg Ile Ile Phe Cys Glu His Pro His Val Tyr Thr
 100 105 110
 Leu Gly Arg Ser Gly Lys Glu Asn Asn Met Leu Leu Gly Glu Glu Gln
 115 120 125
 Leu Lys Thr Ile Gly Ala Thr Leu Tyr His Ile Asp Arg Gly Gly Asp
 130 135 140
 Ile Thr Tyr His Gly Pro Gly Gln Leu Val Cys Tyr Pro Ile Leu Asn
 145 150 155 160
 Leu Glu Glu Phe Gly Leu Gly Leu Lys Glu Tyr Val His Leu Leu Glu
 165 170 175
 Glu Ala Val Ile Arg Val Cys Ala Ser Tyr Gly Val Val Ala Gly Arg
 180 185 190

Leu Glu Lys Ala Thr Gly Val Trp Leu Glu Gly Asp Thr Ser Arg Ala
 195 200 205
 Arg Lys Ile Cys Ala Ile Gly Val Arg Ser Ser His Tyr Val Thr Met
 210 215 220
 His Gly Leu Ala Leu Asn Val Asn Thr Asp Leu Arg Tyr Phe Ser Tyr
 225 230 235 240
 Ile His Pro Cys Gly Phe Ile Asp Lys Gly Val Thr Ser Leu Gln Gln
 245 250 255
 Glu Leu Gly Arg Ser Ile Asp Met Ala Glu Val Lys Glu Arg Leu Gly
 260 265 270
 Arg Glu Leu Leu Ala Asp Leu Leu Ser Lys
 275 280

<210> 8649
 <211> 221
 <212> PRT
 <213> B.fragilis

<400> 8649
 Arg Phe Lys Arg Ser Asn Asn Ile Val Met Lys Ile Lys Arg Phe Glu
 1 5 10 15
 Phe Asn Met Phe Pro Val Asn Cys Tyr Val Leu Trp Asp Glu Thr Asn
 20 25 30
 Glu Ala Val Val Ile Asp Pro Gly Cys Phe Tyr Asp Glu Glu Lys Gln
 35 40 45
 Ala Leu Lys Asn Phe Ile Val Thr Asn Asn Leu Asn Ile Lys His Leu
 50 55 60
 Leu Asn Thr His Leu His Leu Asp His Ile Phe Gly Asn Pro Phe Met
 65 70 75 80
 Leu Arg Glu Phe Gly Leu Ser Ala Glu Ala Asn Gln Ala Asp Glu Tyr
 85 90 95
 Trp Ile Asp Glu Ala Pro Lys Gln Ser Arg Met Phe Gly Phe Gln Leu
 100 105 110
 Asn Glu Ala Pro Val Pro Leu Gly Lys Tyr Leu His Asp Gly Asp Ile
 115 120 125
 Ile Thr Phe Gly Asn Thr Thr Leu Glu Ala Ile His Val Pro Gly His
 130 135 140
 Ser Pro Gly Ser Leu Val Tyr Tyr Cys Arg Ala Asp Asn Cys Met Phe
 145 150 155 160
 Ser Gly Asp Val Leu Phe Gln Gly Ser Ile Gly Arg Ala Asp Leu Ala
 165 170 175
 Gly Gly Asn Phe Asp Glu Leu Lys Glu His Ile Cys Ser Arg Leu Phe
 180 185 190
 Val Leu Pro Asn Glu Thr Ile Val Tyr Pro Gly His Gly Ala Pro Thr
 195 200 205
 Thr Ile Gly Ile Glu Lys Ala Glu Asn Pro Phe Phe Arg
 210 215 220

<210> 8650
 <211> 129
 <212> PRT
 <213> B.fragilis

<400> 8650
 Val Leu Phe Arg Ile Ile Ile Thr Pro Pro Thr Val Ala Ala Glu Thr
 1 5 10 15
 Met Val Pro Arg Asn Phe His Ala Ser Cys Leu Ala Gly Val Leu Pro
 20 25 30
 Ser Gln Tyr Pro Ile Phe Lys Ser Val Ile Lys Pro Pro Ala Met Glu

35	40	45
Ser Ala Val Gln Thr Thr	Pro Pro Ile Thr Asn Glu Ala Thr Met Pro	
50	55	60
Glu Gly Pro Phe Asn Pro Thr Ala Thr Ile Thr Thr Asp Ala Arg Ile		
65	70	75
Asn Val Ile Arg Val Met Pro Asp Thr Gly Leu Val Pro Thr Ile Ala		
85	90	95
Ile Ala Leu Ala Ala Thr Val Val Asn Arg Asn Glu Ile Pro Ala Thr		
100	105	110
Ser Arg Ile Ala Thr Ser Val Cys Thr Arg Leu Pro Cys Ile Thr Ser		
115	120	125

Lys

<210> 8651
 <211> 296
 <212> PRT
 <213> B.fragilis

<400> 8651

Lys Asn Lys Arg Lys Cys Val Tyr Leu Arg Asp Ser Lys Lys Glu Ser	
1	5 10 15
Asn Met Lys Phe Asp Phe Pro Gln Val Asp Leu Pro Cys Glu Ile Leu	
20	25 30
Ala Trp Asn Asp Val Thr Glu Asp Ile Leu Asn Ile Tyr Lys Gln Ser	
35	40 45
Cys Arg Leu Lys Ala Gly Ile Phe Ala Ile Cys Thr Glu Gly Lys Met	
50	55 60
Thr Ala Thr Ile Asn Leu Ile Asp Tyr Glu Ile Lys Pro Asn Asp Leu	
65	70 75
Ile Thr Leu Leu Pro Gly Thr Ile Ile Gln Phe Arg Glu Arg Thr Glu	
85	90 95
Lys Val Arg Leu Cys Phe Ala Gly Phe Ser Ser Glu Cys Val Glu Arg	
100	105 110
Ile Asn Leu Ile Lys Ser Met Val Ser Ser Phe Ser Lys Ile Thr Glu	
115	120 125
Cys Pro Ile Val Glu Leu Gln Glu Asp Ile Ala Ser Tyr Leu Ile Asp	
130	135 140
Tyr Phe Ser Leu Leu Ala Arg Val Thr Cys Asp Glu Lys Leu Ser Leu	
145	150 155
Pro Ser Glu Met Thr Glu Val Ser Leu Arg Ser Ile Leu Thr Ala Val	
165	170 175
Gly Leu Ile Tyr Gln Arg Tyr Ser Ser Lys Asn His Asn Thr Asn Arg	
180	185 190
Lys Glu Glu Ile Cys Arg Glu Leu Val Gly Leu Val Thr Glu His Tyr	
195	200 205
Thr Glu Glu Arg Arg Ala Gln Phe Tyr Ala Asp Lys Leu Gly Ile Ser	
210	215 220
Leu Gln His Leu Ser Thr Thr Val Lys Gln Val Thr Gly Arg Asn Val	
225	230 235
Leu Asp Val Ile Ala Tyr Val Val Ile Ile Asp Ala Lys Ala Lys Leu	
245	250 255
Lys Ser Ser Asn Met Thr Ile Gln Glu Ile Ala Tyr Ser Leu Asn Phe	
260	265 270
Pro Ser Ala Ser Phe Phe Gly Lys Tyr Phe Arg Arg Tyr Val Gly Met	
275	280 285
Ser Pro Leu Glu Phe Arg Asn Ser	
290	295

<210> 8652
 <211> 237
 <212> PRT
 <213> B.fragilis

<400> 8652

Ser Asn Phe Ile Ile Lys Ile Gln Ile Tyr Tyr Asn Leu Met Asn Thr
 1 5 10 15
 Thr Glu Gln Thr Ser Ser Leu Pro Ser Ala Gly Gly Glu Asn Gly Val
 20 25 30
 Lys Leu Leu Leu Lys Tyr Phe Pro Asp Leu Thr Glu Glu Gln Arg Lys
 35 40 45
 Gln Phe Ala Ala Leu Tyr Glu Leu Tyr Ile Asp Trp Asn Ser Lys Ile
 50 55 60
 Asn Val Ile Ser Arg Lys Asp Ile Glu Asn Leu Tyr Glu His His Val
 65 70 75 80
 Leu His Ser Leu Gly Ile Ala Arg Val Ile Arg Phe Arg Ala Gly Ser
 85 90 95
 Ser Val Met Asp Leu Gly Thr Gly Gly Gly Phe Pro Gly Ile Pro Leu
 100 105 110
 Ala Ile Leu Phe Pro Asp Thr Lys Phe His Leu Val Asp Ser Ile Gly
 115 120 125
 Lys Lys Val Arg Val Ala Thr Glu Val Ala Asn Ala Ile Gly Leu Lys
 130 135 140
 Asn Val Thr Phe Arg His Ala Arg Ala Glu Glu Lys Gln Thr Phe
 145 150 155 160
 Asp Phe Val Val Ser Arg Ala Val Met Pro Leu Ala Asp Leu Ile Lys
 165 170 175
 Ile Ile Arg Lys Asn Ile Ser Pro Lys Gln Gln Asn Ala Leu Pro Asn
 180 185 190
 Gly Leu Ile Cys Leu Lys Gly Gly Glu Leu Glu His Glu Ala Met Pro
 195 200 205
 Phe Lys His Lys Thr Ser Met His Asn Leu Asn Glu Asp Phe Asp Glu
 210 215 220
 Glu Phe Phe Gln Thr Lys Lys Val Val Tyr Val Thr Ile
 225 230 235

<210> 8653
 <211> 134
 <212> PRT
 <213> B.fragilis

<400> 8653

Tyr Thr Thr Leu Ile Pro Phe Pro Val Ile Leu Ser Lys Leu Ser Asn
 1 5 10 15
 Trp Ala Gly Thr Ile Phe Ser Thr Ser Cys Arg Glu Glu Thr Met Ala
 20 25 30
 Pro Ala Ser Gly Cys Ser Asp Leu Ser Ser Ala Ala Ser Arg Thr Phe
 35 40 45
 Leu Lys Cys Ser Ser Cys Thr Trp Ala Gln Ser His Pro Glu Thr Val
 50 55 60
 Gly Cys Pro Ser Val Asn Val Pro Val Leu Ser Ser Thr Thr Thr Ser
 65 70 75 80
 Thr Leu Arg Ile Cys Ser Arg Ala Thr Ala Ser Phe Ile Arg Ile Trp
 85 90 95
 Leu Leu Ala Ala Leu Pro Met Pro Thr Ile Arg Ala Val Gly Val Ala
 100 105 110
 Ser Pro Lys Ala His Gly Gln Ala Met Thr Ser Thr Asp Thr Ala Glu
 115 120 125

Ser Lys Ala Cys Glu Lys
130

<210> 8654
<211> 338
<212> PRT
<213> B.fragilis

<400> 8654

Leu Gln Pro Val Ser Ala Ala Leu Gln Leu Ser Phe Ser Arg Thr Glu
1 5 10 15
Val Glu Ser Leu Lys Glu Gln Lys Glu Ala Leu Thr Asp His Ser Pro
20 25 30
Glu Pro Ala Arg Ile Ile Gly Glu Ser Ala Ala Met Gln Ala Ile Phe
35 40 45
Gln Thr Ile Arg Lys Phe Ala Asp Thr Asp Ala Asn Leu Leu Leu Leu
50 55 60
Gly Glu Asn Gly Thr Gly Lys Asp Leu Ile Ala Arg Tyr Val Tyr Glu
65 70 75 80
Gln Ser Pro Arg Lys Gly Lys Ile Tyr Val Pro Ile Asp Leu Gly Ser
85 90 95
Ile Pro Glu Thr Leu Phe Glu Ser Glu Leu Phe Gly Phe Glu Lys Gly
100 105 110
Ala Phe Thr Asp Ala Arg Lys Lys Lys Pro Gly Arg Leu Glu Val Ala
115 120 125
Ser Gly Gly Thr Leu Phe Leu Asn Glu Ile Gly Asn Leu Ser Leu Pro
130 135 140
Leu Gln Ala Lys Leu Leu Ser Val Ile Glu Gln Arg Lys Ser Ser Arg
145 150 155 160
Leu Gly Ser Thr Thr Ser Tyr Pro Val Asp Val Arg Leu Ile Cys Ala
165 170 175
Thr Asn Thr Asp Leu Tyr Thr Ala Ile Asp Asn Gly Leu Phe Arg Gln
180 185 190
Asp Leu Leu Tyr Arg Ile Asn Thr Ile Glu Ile Arg Ile Pro Pro Leu
195 200 205
His Glu Arg Gly Asn Asp Leu Phe Leu Leu Ala Asp His Phe Leu Gln
210 215 220
Arg Tyr Arg Lys Lys Tyr Lys Lys Glu Val Arg Gly Ile Ser Lys Glu
225 230 235 240
Ala Arg Arg Leu Met Gln Leu Tyr Arg Trp Pro Gly Asn Val Arg Glu
245 250 255
Leu Glu His Thr Ile Glu Arg Ala Val Ile Leu Ser Gly Asn Pro Met
260 265 270
Leu Met Pro Asn Asp Phe Met Leu Arg Thr Ser Pro Gln Gly Gln Val
275 280 285
Ser Glu Lys Glu Lys Tyr Asn Leu Glu Arg Gln Glu Arg Glu Thr Ile
290 295 300
Ser Glu Val Leu Arg Leu Cys Ala Gly Asn Ile Thr Leu Ala Ser Glu
305 310 315 320
Met Leu Gly Ile Thr Arg Thr Ser Leu Tyr Arg Arg Ile Glu Lys His
325 330 335
Gly Leu

<210> 8655
<211> 158
<212> PRT
<213> B.fragilis

<400> 8655

Phe Ile Leu Val Asn Arg Gln His Lys Lys Arg Lys Lys Asn Val Ala
 1 5 10 15
 Gly Trp Leu Asn Leu Leu Ile Phe Ala Thr Val Met Lys Arg Phe Arg
 20 25 30
 Tyr Ile Leu Ala Val Ile Leu Ser Leu Leu Ile Val Tyr Val Gly Ala
 35 40 45
 Gly Val Ser Val Ala Gln Tyr Cys Cys Ser Gly Cys Glu Thr Ala Asn
 50 55 60
 Cys Cys Cys Ala Asp Lys Cys Gly Phe Cys Gly Lys Phe Asp Phe Glu
 65 70 75 80
 Phe His Lys Ser Cys Arg Gly Glu Gly Cys Thr Ala Thr Ile Tyr Lys
 85 90 95
 Leu Asp Leu Val Lys Gln Ala Phe Glu Ser Ser Val Pro Ala Pro Val
 100 105 110
 Ser Leu Leu Leu Cys Asp Gln Val Ser Asp Leu Leu Cys Ala Leu Phe
 115 120 125
 Arg Asp Glu Val Leu Asp Pro Pro Tyr Val Ile Pro Pro Pro Lys Thr
 130 135 140
 Ser Ser Arg His Tyr Leu Ala Leu Tyr Ser Thr Leu Leu Ile
 145 150 155

<210> 8656

<211> 433

<212> PRT

<213> B.fragilis

<400> 8656

Glu Asn Ile Ser Val Ser Pro Gly Lys Lys Lys Gln Met Ile Glu Lys
 1 5 10 15
 Met Lys Glu Gln Asp Cys Asp Lys Lys Lys Ser Ile Ser Gln Gly Lys
 20 25 30
 Lys His Asn Ile Phe Tyr Lys Met Ile Met Ser Arg Arg Ala Phe Gly
 35 40 45
 Ile Thr Tyr Phe Val Tyr Gly Ala Thr Val Leu Ser Val Leu Ala Glu
 50 55 60
 Arg Ala Glu Ile Leu Ser Ser Thr Pro Ser Val Gly Ser Arg Ile Phe
 65 70 75 80
 Leu Leu Leu Ser Ile Cys Phe Pro Phe Ala Tyr Gly Thr Tyr Leu Leu
 85 90 95
 Cys Thr Lys Asp Lys Asn Ser Ile Lys Met Asn Glu Ile Ile Thr Ser
 100 105 110
 Asp Tyr Phe Lys Arg Val Ile Ser His Lys Trp Asn Ile Ile Ile Cys
 115 120 125
 Leu Met Val Ile Val Val Cys Leu Ser Phe Val Val Ile Phe Ser Asp
 130 135 140
 Arg Asn Trp Glu Ala Pro Ile Asn Phe Asn Leu Pro Ser Ile Ile Val
 145 150 155 160
 Gly Ser Val Thr Gly Tyr Leu Leu Gly Val Leu Ile Arg Arg Val Leu
 165 170 175
 Arg Arg Asn Asn Thr Gly Lys Lys Ser Phe Lys Leu Ile Phe Glu Cys
 180 185 190
 Val Gly Ser Leu Cys Leu Lys Val Ser Asp Gln Leu Glu Glu Ser Val
 195 200 205
 Phe Thr Ile Asp Trp Asp Ser Ser Ile Ile Pro Pro Ser Ile Gly Asp
 210 215 220
 Asp Phe Glu Ile Glu Glu Phe Ile Pro Gly Leu Asn Trp Asn Glu Lys
 225 230 235 240
 Gln Arg Leu Tyr Ser Ile Tyr Gly His Ala Thr Val Ile Glu Arg Ser

4770
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1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

<400> 8657

[illegible]

210 215 220
 Thr Ile Tyr Ser Gly Tyr Asp Arg Met Val Cys Phe Ile Ala Leu Ile
 225 230 235 240
 Ile Ile Asn Ile Gly Leu Ile Ala Thr Leu Ile His Arg Leu Tyr Leu
 245 250 255
 Ile Ser His Thr Thr Asn Thr Glu Ile Lys
 260 265

<210> 8658
 <211> 221
 <212> PRT
 <213> B.fragilis

<400> 8658
 Ser Phe Leu Ser Thr Phe Ala Gly Met Lys Pro Leu Thr Asp Thr Asp
 1 5 10 15
 Tyr Ile His Ala Leu Ile Ala Glu Gly Glu His Gln Gln Gln Asp Phe
 20 25 30
 Lys Phe Glu Ile Ser Asp Ala Arg Lys Ile Ala Lys Thr Leu Ser Ala
 35 40 45
 Phe Ala Asn Thr Asp Gly Gly Arg Leu Leu Ile Gly Val Lys Asp Asn
 50 55 60
 Gly Lys Ile Ala Gly Val Arg Ser Asp Glu Glu Lys Tyr Met Ile Glu
 65 70 75 80
 Ala Ala Ala Gln Leu Tyr Cys Arg Pro Glu Val Asp Tyr Ser Met Gln
 85 90 95
 Thr Phe His Val Glu Gly Arg Ser Val Leu Val Val Gln Ile Asp Glu
 100 105 110
 Ser Glu His Lys Pro Val Phe Ala Lys Asp Glu Asn Gly Lys Ser Leu
 115 120 125
 Ala Tyr Ile Arg Ile Lys Asp Glu Asn Ile Leu Ala Thr Pro Val His
 130 135 140
 Leu Arg Val Trp Gln Gln Ser Gly Ser Pro Ala Gly Glu Leu Ile Arg
 145 150 155 160
 Tyr Thr Glu Arg Glu Gln Leu Leu Leu Asp Leu Leu Glu Glu Asn Thr
 165 170 175
 Ser Leu Ser Leu Asn Arg Tyr Cys Arg Gln Ala Gly Ile Ser Arg Arg
 180 185 190
 Ala Ala Glu His Leu Leu Ala Lys Phe Ile Arg Phe Asp Ile Val Glu
 195 200 205
 Pro Ile Phe Glu Asn His Lys Phe Tyr Phe Arg Leu Lys
 210 215 220

<210> 8659
 <211> 304
 <212> PRT
 <213> B.fragilis

<400> 8659
 Glu Arg Ile Ser Ile Met Thr Gly Asp Tyr Lys Phe Arg Phe Met Pro
 1 5 10 15
 Gly Ile Leu Ser Leu Ile Phe Thr Ala Val Leu Leu Ser Gly Cys Ile
 20 25 30
 Ala Glu Asn Thr Asp Asp Cys Phe Lys Gly Val Ser Leu Gln Val Lys
 35 40 45
 Leu Pro Ala Asp Val Ser Gly Glu Thr Met Lys Asp Ile Asn Leu Tyr
 50 55 60
 Val Phe Asp Asp Lys Asp Leu Leu Leu Asp Ile Leu Pro Ile Ser Arg
 65 70 75 80

Ser Glu Ser Val Val Leu Asp Tyr Pro Gly Ile Pro Val Leu His Cys
 85 90 95
 Ile Thr Trp Cys Asn Thr Gly Asp Gly Ala Val Ser Ala Ser Ser Leu
 100 105 110
 Lys Lys Gly Asp Pro Leu Ser Ala Gly Phe Ile Ser Leu Lys Pro Ser
 115 120 125
 Ala Ala Thr Arg Ala Gln Met Ser Leu Phe Asn Pro Pro Ala Asp Leu
 130 135 140
 Phe Tyr Gly Glu Leu Ile Leu Glu Asn Thr Ser Thr Ser Asn His Met
 145 150 155 160
 Glu Glu Gln Glu Leu Ser Val Ser Arg Met Val Ala Ser Met Asn Ile
 165 170 175
 Thr Ile Arg Gly Leu Glu Leu Leu Gly Glu Ser Asn Arg Gly Val Tyr
 180 185 190
 Ser Phe Val Val His Glu Thr Ala Ser Arg Leu Asp Phe Glu Gly Arg
 195 200 205
 Tyr Gly Gly Asp Pro Ala Ser Tyr Ala Phe Thr Pro Ser Phe Glu Val
 210 215 220
 Gly Lys Asp Cys Thr Met Pro Thr Phe Asn Leu Phe Pro Val Met Gly
 225 230 235 240
 Ser Gly Gly Ile Ile Ile Asp Ile Tyr His Asp Gly Lys Leu Leu Arg
 245 250 255
 Ser Val Ser Thr Asp Ser Gly Asn Arg Pro Leu Val Pro Val Val Gly
 260 265 270
 Lys Thr Leu Asn Val Leu Leu Asn Phe Lys Leu Asp Val Asp Val Gln
 275 280 285
 Val Glu Ile Thr Gly Trp Gly Glu Lys Tyr Ile Trp Lys Glu Tyr Asn
 290 295 300

<210> 8660

<211> 61

<212> PRT

<213> B.fragilis

<400> 8660

Leu Ser Pro Ser Pro Ala Gln Pro Ala Cys Tyr Glu Asn Val Tyr Cys
 1 5 10 15
 Asn Val Asp Asp Pro Val Pro Pro Val Cys Gln Ala Val Thr Leu Ile
 20 25 30
 Glu Asp Val Ile Ser Phe Gly Val Lys Val Arg Val Ile Lys Cys Asp
 35 40 45
 Phe Pro Thr Ser Val Val Thr Glu Met Val Asp Ser Gly
 50 55 60

<210> 8661

<211> 302

<212> PRT

<213> B.fragilis

<400> 8661

Ala Met Thr Ser Gln Glu Ala Asn Ser Ile Pro Leu Glu Asp Ile Leu
 1 5 10 15
 Ser Arg Tyr Gly Tyr Glu Pro Ser Arg Arg Tyr Gly Gly Tyr Asp Met
 20 25 30
 Tyr Arg Ser Pro Phe Arg Cys Asp Ser Ser Pro Ser Phe Lys Val Phe
 35 40 45
 Arg Asn Glu Asn Arg Trp Tyr Asp Phe Gly Asp Ser Ser His Gly Arg
 50 55 60
 Val Val Asp Leu Val Met Arg Ile His Asn Cys Ser Phe Pro Gln Ala

65		70		75		80									
Met	Lys	Glu	Ile	Glu	Gly	Leu	Gly	Phe	Ser	Ser	Gly	Met	Ile	Pro	Gln
		85							90					95	
Pro	Arg	Pro	Val	Pro	Val	Thr	Val	Gln	Lys	Ala	Ser	Gly	Met	Thr	Leu
		100						105					110		
Leu	Lys	Ile	Ile	Pro	Val	Glu	Asn	Gly	His	Leu	Leu	Asp	Tyr	Ala	Ala
		115				120						125			
Ser	Arg	Gly	Ile	Asp	Ala	Asp	Ile	Val	Arg	Glu	His	Cys	Val	Glu	Val
		130				135					140				
His	Tyr	Cys	Phe	Glu	Lys	Asn	Pro	Arg	Glu	Lys	Tyr	Ala	Leu	Gly	Phe
		145			150					155					160
Ala	Asn	Asp	His	Gly	Gly	Phe	Glu	Leu	Arg	Asn	Ser	Met	Phe	Lys	Gly
			165						170					175	
Cys	Ala	Thr	Ala	Lys	Asp	Ile	Thr	Gly	Leu	Ala	Ala	Gly	Asn	Arg	Ser
		180						185					190		
Cys	Ala	Val	Phe	Glu	Gly	Phe	Phe	Asp	Leu	Leu	Ser	Phe	Lys	Gln	Tyr
		195				200						205			
Ala	Lys	Glu	His	Pro	Glu	Met	Pro	Ala	Leu	Gly	Lys	Leu	Asp	Leu	Cys
		210				215					220				
Val	Leu	Asn	Ser	Thr	Ser	Ile	Val	Glu	Arg	Ser	Lys	Asp	Phe	Leu	Ser
		225			230					235					240
Arg	Tyr	Glu	Lys	Val	His	Ala	Phe	Leu	Asp	Asn	Asp	Ala	Pro	Gly	Arg
			245						250					255	
Glu	Ala	Leu	Arg	Lys	Met	Arg	His	Phe	Leu	Pro	Lys	Asp	Thr	Val	Leu
		260						265					270		
Val	Asn	Glu	Ala	Glu	Arg	Leu	Tyr	Pro	Ser	Cys	Asn	Asp	Phe	Asn	Glu
		275				280						285			
Phe	Leu	Gln	Lys	Ile	Lys	Cys	Pro	Ala	Ser	Gly	Arg	Glu	Met		
		290				295					300				

<210> 8662

<211> 326

<212> PRT

<213> B.fragilis

<400> 8662

Ser	Lys	Thr	Phe	Lys	Val	Ile	Phe	Met	Glu	Gln	Leu	Ser	Phe	Ile	Glu
1				5					10					15	
Ser	Phe	Arg	Thr	Ser	Pro	Phe	Ile	Leu	Thr	Glu	Gly	Ala	Ile	Val	Glu
		20						25					30		
Arg	Leu	Arg	His	Glu	Phe	His	Ile	Ser	Pro	Asp	Lys	His	Ile	Ala	His
		35				40						45			
Ala	Ala	Leu	Ile	Tyr	Asp	Asp	Ser	His	Arg	Glu	Ile	Leu	Ala	Ser	Ile
		50				55					60				
Tyr	Arg	Gln	Tyr	Leu	Gln	Ile	Ala	Thr	Glu	Phe	Arg	Leu	Pro	Leu	Met
65				70					75					80	
Leu	Met	Thr	Pro	Thr	Arg	Arg	Ala	Asn	Ile	Glu	Gln	Ile	Ala	Ala	Ser
			85					90						95	
Asp	Tyr	Arg	His	Lys	Asn	Val	Leu	Ala	Asp	Thr	Met	Ala	Phe	Leu	Ser
		100						105					110		
Arg	Phe	Arg	Asp	Glu	Ala	Ser	Thr	Pro	Val	Tyr	Ile	Gly	Gly	Leu	Ala
		115				120						125			
Gly	Cys	Arg	Gly	Asn	Ala	Tyr	Asp	Gly	Arg	Tyr	Tyr	Leu	Ser	Val	Glu
		130				135					140				
Glu	Ala	Met	Glu	Phe	His	Phe	Pro	Thr	Val	Arg	Thr	Leu	Val	Gln	Ser
		145			150					155					160
Gly	Ala	Asp	Tyr	Leu	Phe	Ala	Gly	Ile	Met	Pro	Gln	Leu	Thr	Glu	Ala
			165					170						175	
Ile	Gly	Met	Ala	Asn	Ala	Met	Ala	Ala	Thr	Gly	Leu	Pro	Tyr	Ile	Ile

180 185 190
 Ser Phe Met Ile Cys Arg Asp Gly Arg Leu Ile Asp Gly Thr Phe Ile
 195 200 205
 His Asp Ala Ile Asp Ala Ile Glu Lys Glu Thr Ser Thr Arg Pro Leu
 210 215 220
 Cys Tyr Met Ala Asn Cys Val His Pro Asp Val Leu His Gln Ala Leu
 225 230 235 240
 Leu His Pro Arg Asn Asp Thr Pro Leu Val Arg Gln Arg Phe Gln Gly
 245 250 255
 Ile Gln Ala Asn Ala Ala Asn Leu Ser Pro Glu Glu Leu Asp Gly Cys
 260 265 270
 Asp His Leu Ile Ser Ser Ser Pro Glu Glu Leu Ala Asp Arg Leu Met
 275 280 285
 Thr Leu Leu Trp Asp Phe Pro Leu Lys Ile Cys Gly Gly Cys Cys Gly
 290 295 300
 Thr Asn Gln Gln His Met His Arg Phe Ala Glu Met Leu Ala Tyr Arg
 305 310 315 320
 Arg Asp Asn Lys Ala Trp
 325

<210> 8663
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 8663
 Thr Val Thr Pro Glu Ser Ser Phe Leu Tyr Ser Gly Ile Ile Ala Tyr
 1 5 10 15
 Ser Ile Cys Asp Ile Ala Ile Ser Arg Glu Leu Lys Ala Ala Tyr Leu
 20 25 30
 Cys Asn Ile Arg Leu Arg Gln Leu Lys Glu Asp Pro Lys Arg Tyr Glu
 35 40 45
 Lys Glu Phe Ile Asn Phe Ser Arg Thr Ala Asp Ile Gly Asn Asp Ile
 50 55 60
 Gly Thr Glu Arg Arg Asn His Tyr Glu Glu Val
 65 70 75

<210> 8664
 <211> 513
 <212> PRT
 <213> B.fragilis

<400> 8664
 Ile Thr Met Leu Val Thr Ile Val Ala Ser Ile Ala Cys Phe Ile Val
 1 5 10 15
 Gly Gly Ile Leu Ser Tyr Val Leu Phe Lys Tyr Gly Leu Lys Ala Lys
 20 25 30
 Tyr Asp Asn Val Leu Lys Glu Ala Glu Thr Glu Ala Glu Val Ile Lys
 35 40 45
 Lys Asn Lys Leu Leu Glu Val Lys Glu Lys Phe Leu Asn Lys Lys Ala
 50 55 60
 Asp Leu Glu Lys Glu Val Ala Leu Arg Asn Gln Lys Ile Gln Gln Ala
 65 70 75 80
 Glu Asn Lys Leu Lys Gln Arg Glu Met Val Leu Ser Gln Arg Gln Glu
 85 90 95
 Glu Ile Gln Arg Lys Arg Ala Glu Ala Asp Ala Val Arg Glu Asn Leu
 100 105 110
 Glu Ala Gln Leu Gly Ile Val Asp Lys Lys Lys Glu Glu Leu Asp Lys
 115 120 125

Leu Gln His Gln Glu Ile Glu Lys Leu Glu Ala Leu Ser Gly Leu Ser
 130 135 140
 Ala Asp Glu Ala Lys Glu Arg Leu Val Glu Ser Leu Lys Glu Glu Ala
 145 150 155 160
 Lys Thr Gln Ala Gln Ser Tyr Ile Asn Asp Ile Met Asp Asp Ala Lys
 165 170 175
 Leu Thr Ala Ser Lys Glu Ala Lys Arg Ile Val Ile Gln Ser Ile Gln
 180 185 190
 Arg Val Ala Thr Glu Thr Ala Ile Glu Asn Ser Val Thr Val Phe His
 195 200 205
 Ile Glu Ser Asp Glu Ile Lys Gly Arg Ile Ile Gly Arg Glu Gly Arg
 210 215 220
 Asn Ile Arg Ala Leu Glu Ala Ala Thr Gly Val Glu Ile Val Val Asp
 225 230 235 240
 Asp Thr Pro Glu Ala Ile Val Leu Ser Ala Phe Asp Pro Val Arg Arg
 245 250 255
 Glu Ile Ala Arg Leu Ala Leu His Gln Leu Val Thr Asp Gly Arg Ile
 260 265 270
 His Pro Ala Arg Ile Glu Glu Val Val Ala Lys Val Arg Lys Gln Val
 275 280 285
 Glu Glu Glu Ile Ile Glu Thr Gly Lys Arg Thr Thr Ile Asp Leu Gly
 290 295 300
 Ile His Gly Leu His Pro Glu Leu Ile Arg Ile Ile Gly Lys Met Lys
 305 310 315 320
 Tyr Arg Ser Ser Tyr Gly Gln Asn Leu Leu Gln His Ala Arg Glu Thr
 325 330 335
 Ala Asn Leu Cys Ala Val Met Ala Ser Glu Leu Gly Leu Asn Pro Lys
 340 345 350
 Lys Ala Lys Arg Ala Gly Leu Leu His Asp Ile Gly Lys Val Pro Asp
 355 360 365
 Glu Glu Pro Glu Leu Pro His Ala Leu Leu Gly Met Lys Leu Ala Glu
 370 375 380
 Lys Phe Lys Glu Lys Pro Asp Ile Cys Asn Ala Ile Gly Ala His His
 385 390 395 400
 Asp Glu Ile Glu Met Thr Ser Leu Leu Ala Pro Ile Val Gln Val Cys
 405 410 415
 Asp Ala Ile Ser Gly Ala Arg Pro Gly Ala Arg Arg Glu Ile Val Glu
 420 425 430
 Ala Tyr Ile Lys Arg Leu Asn Asp Leu Glu Gln Leu Ala Met Ser Tyr
 435 440 445
 Pro Gly Val Thr Lys Thr Tyr Ala Ile Gln Ala Gly Arg Glu Leu Arg
 450 455 460
 Val Ile Val Gly Ala Asp Lys Ile Asp Asp Lys Gln Thr Glu Asn Leu
 465 470 475 480
 Ser Gly Glu Ile Ala Lys Lys Ile Gln Asp Glu Met Thr Tyr Pro Gly
 485 490 495
 Gln Val Lys Ile Thr Val Ile Arg Glu Thr Arg Ala Val Ser Phe Ala
 500 505 510
 Lys

<210> 8665

<211> 61

<212> PRT

<213> B.fragilis

<400> 8665

Gly Tyr Phe Pro Pro Ser Ile Asn Phe Ile Phe His Ile Cys Asp Met
 1 5 10 15

Phe Met Ile Arg Lys Tyr Thr His His Leu Met Ser Cys Lys Gly Met
 20 25 30
 Ser Glu Asn Phe Glu Met Asn Leu Phe Cys Ser Lys Ile Lys Lys Val
 35 40 45
 Trp Val Val Tyr Gly Ile Cys Val Glu Ser Ala Ser Leu
 50 55 60

<210> 8666

<211> 251

<212> PRT

<213> B.fragilis

<400> 8666

Phe Tyr Leu Pro Asp Ala Gly Cys Phe His Phe Ile Ser Val Phe Leu
 1 5 10 15
 Gln Glu Ser Lys Glu Arg Asp Met Gln Gln Ile Lys Val Ile Ala Phe
 20 25 30
 Asp Ala Asp Asp Thr Leu Trp Asp Asn Gln Val Phe Tyr Asp Lys Val
 35 40 45
 Glu Ser Glu Phe Cys His Leu Leu Ala Gly Tyr Gly Thr Ala Glu Glu
 50 55 60
 Ile Ser Ser Arg Leu Phe Ala Ile Glu Met Glu Asn Met Asp Ile Tyr
 65 70 75 80
 Lys Tyr Gly Ala Lys Pro Phe Thr Leu Ser Met Val Glu Ala Ala Val
 85 90 95
 Lys Ile Ser Arg Asn Arg Val Pro Ala Glu Val Ile Gly Arg Ile Val
 100 105 110
 Glu Met Gly Lys Glu Leu Leu Glu Met Pro Ile Arg Leu Leu Gly Gly
 115 120 125
 Val Thr Glu Ala Leu Glu Thr Leu Lys Asp Asp Tyr Lys Leu Val Val
 130 135 140
 Ala Thr Lys Gly Asp Leu Leu Asp Gln Glu Arg Lys Leu Gln Arg Ser
 145 150 155 160
 Gly Ile Ser His Tyr Phe Asp His Thr Glu Ile Met Thr Asp Lys Ala
 165 170 175
 Pro Gln Asp Tyr Gln Arg Leu Ile Ser Ser Leu Asp Val Ala Pro Gln
 180 185 190
 Ser Phe Leu Met Val Gly Asn Ser Leu Lys Ser Asp Val Leu Pro Val
 195 200 205
 Leu Ser Leu Gly Gly His Ala Ile His Val Pro Ala Glu Ala Met Trp
 210 215 220
 Lys His Glu Val Ile Ser Gly Thr Glu Arg Glu Tyr Leu Met Ile His
 225 230 235 240
 Ser Leu Ala Glu Leu Pro Ala Val Leu Arg Gly
 245 250

<210> 8667

<211> 1445

<212> PRT

<213> B.fragilis

<400> 8667

Leu Ile Ser Phe Ile Met Ser Gln Glu Asn Pro Ser Ser Gln Leu Asp
 1 5 10 15
 Val Glu Phe Ile Tyr Leu Pro Val Ile Asn Tyr Ser Met Gln Gln Asn
 20 25 30
 Arg Ile Pro Val Val Arg Leu Leu Ser Ile Lys Asn Asn Thr Glu His
 35 40 45
 Pro Leu Ala Asp Leu Lys Val Phe Leu Thr Leu Glu Pro Glu Phe Ala

[illegible]

Arg	Tyr	Ala	Pro	Ile	Leu	Leu	Leu	Pro	Val	Glu	Met	Ile	Arg	Lys	Ser
530					535					540					
Val	Ser	Lys	Gly	Tyr	Ile	Ile	Arg	Ala	Arg	Glu	Glu	Glu	Ser	Met	Leu
545					550					555					560
Asn	Ile	Thr	Leu	Leu	Glu	Met	Leu	Arg	Gln	Asn	Phe	Gly	Ile	Thr	Ile
				565					570					575	
Ser	Gly	Leu	Asp	Ser	Leu	Pro	Lys	Asp	Glu	Asn	Gly	Thr	Asp	Val	Lys
			580					585					590		
Arg	Ile	Phe	Ser	Ile	Phe	Arg	Lys	Ala	Val	Met	Asn	Glu	Lys	Arg	Trp
		595					600					605			
Asp	Val	Glu	Glu	Gln	Ala	Ile	Leu	Gly	Thr	Phe	Ser	Phe	Ser	Lys	Phe
	610					615					620				
Ile	Met	Trp	Asn	Asp	Ile	His	Ser	Asn	Ala	Glu	Glu	Leu	Ser	Lys	Asn
625					630					635					640
Lys	Ile	Val	Gly	Ser	Leu	Met	Ser	Gly	Lys	Met	Glu	Trp	Glu	Val	Ala
				645					650					655	
Glu	Val	Asp	Ala	Asn	Ala	Ile	Glu	Leu	Asp	His	Ala	Leu	Thr	Pro	Ala
			660					665					670		
Asp	Ile	Ala	Leu	Pro	Val	Ser	Ala	Asp	Ser	Ser	Gln	Leu	Glu	Ala	Val
	675						680					685			
Tyr	Glu	Ala	Val	Asn	Glu	Lys	Ser	Phe	Ile	Leu	His	Gly	Pro	Pro	Gly
690						695					700				
Thr	Gly	Lys	Ser	Gln	Thr	Ile	Thr	Asn	Ile	Ile	Ala	Asn	Ala	Leu	Tyr
705					710					715					720
Gln	Gly	Lys	Arg	Val	Leu	Phe	Val	Ala	Glu	Lys	Met	Ala	Ala	Leu	Ser
				725					730					735	
Val	Val	Gln	Lys	Arg	Leu	Met	Asn	Ile	Gly	Leu	Ala	Pro	Phe	Cys	Leu
			740					745					750		
Glu	Leu	His	Ser	Asn	Lys	Ala	Arg	Lys	Thr	Asp	Val	Leu	Ser	Gln	Leu
	755						760					765			
Lys	Glu	Ser	Thr	Glu	Ile	Phe	Arg	Tyr	Lys	Glu	Pro	Glu	Glu	Phe	Lys
770						775					780				
Glu	Glu	Ser	Glu	Arg	Leu	Phe	Lys	Met	Arg	Gln	Gln	Ile	Asn	Gly	Tyr
785					790					795					800
Val	Glu	Ala	Leu	His	Arg	Ile	Tyr	Pro	Cys	Gly	Ile	Ser	Val	Tyr	Glu
				805					810					815	
Ala	Ile	Thr	Arg	Tyr	Ser	Ser	Ile	Asp	Glu	Thr	Glu	Glu	Ile	Met	Ile
			820					825					830		
Pro	Ala	Ser	Leu	Leu	Ala	Ser	Leu	Thr	Lys	Glu	Gln	Phe	Asn	Glu	Trp
			835				840					845			
Asn	His	Ala	Val	Glu	Glu	Leu	Ile	Gly	Val	Gly	Lys	Val	Ser	Gly	His
	850					855					860				
Ser	His	Gln	His	Pro	Leu	Thr	Gly	Ile	Asn	Ile	Met	Glu	Tyr	Ser	Ser
865					870					875					880
Gln	Leu	Lys	Glu	Glu	Ala	Asp	Lys	Leu	Leu	Lys	Asp	Tyr	Met	Ile	Leu
				885					890					895	
Leu	Gln	Lys	Met	Glu	Glu	Lys	Met	Asn	Arg	Cys	Phe	Ser	Asn	Tyr	Gly
			900					905					910		
Ile	Gly	Asn	Lys	Cys	Thr	Glu	Lys	Leu	Leu	Asp	Asn	Phe	Val	Arg	Phe
	915						920					925			
Ile	Arg	Ile	Leu	Met	Gln	Leu	Pro	Gly	Met	Thr	Gly	Asn	Leu	Met	Leu
930						935					940				
Leu	Thr	Asp	Leu	Asp	Glu	Asn	Val	Asp	Lys	Ile	Gly	Arg	Ile	Ile	Glu
945					950					955					960
His	Gly	Arg	Lys	Arg	Asp	Glu	Phe	Cys	Asn	Leu	Leu	Lys	Gln	Ser	Phe
				965					970					975	
Glu	Asp	Thr	Phe	Leu	Thr	Leu	Pro	Val	Gln	Gln	Lys	Ile	Ser	Glu	Trp
			980					985					990		
Lys	Asp	Ile	Thr	Gln	Ser	Trp	Phe	Leu	Pro	Arg	Leu	Leu	Lys	Gln	Arg

995 1000 1005
 Lys Phe Cys Lys Glu Leu Ser Leu Phe Ser Leu Gln Gly Arg Val Asn
 1010 1015 1020
 Lys Glu Gln Val Leu Pro Ala Leu Gln Gln Leu Leu Phe Tyr Gln Gln
 1025 1030 1035 1040
 Gln Lys Gln Glu Val Asp Ser Ser Ser Arg Trp Phe Glu Asp Leu Phe
 1045 1050 1055
 Gly Asn Lys Ser His Pro Gly Glu Glu Gln Trp Asp Asp Ile Glu Val
 1060 1065 1070
 Met Ser Lys Ala Ile Leu Gln Leu Asn Arg Leu Leu Val Glu Val Val
 1075 1080 1085
 Asp Asp Pro Met Ser Ile Arg Arg Val Lys Glu Lys Leu Ala Glu Gln
 1090 1095 1100
 Leu Ser Glu Gly Tyr Ser Leu Phe Arg Gln Met Asn Arg Glu Leu Leu
 1105 1110 1115 1120
 Glu Gly Leu Val Tyr Asp Trp Glu Cys Ile Lys Gln Leu Glu Lys Ser
 1125 1130 1135
 Met Leu Gln Leu Leu Gly Val Ser Lys Glu Val Leu His Ala Cys Glu
 1140 1145 1150
 Asp Asp Trp Leu Ala Gly Ala Ser Arg Gln Cys Glu Ile Trp Ala Arg
 1155 1160 1165
 Asn Thr Asp Lys Leu Lys Asp Trp Tyr Arg Trp Leu Asn Val Ser Arg
 1170 1175 1180
 Arg Phe Glu Ala Cys Gly Leu Thr Ser Val Phe Ala Ala Tyr Thr Glu
 1185 1190 1195 1200
 Arg Asn Leu Pro Ala Glu Arg Met Met Asn Ile Tyr Leu Lys Gly Phe
 1205 1210 1215
 Tyr His Ser Phe Ile Glu Tyr Ala Ile Gly Lys Glu Gln Val Leu Gln
 1220 1225 1230
 Phe Phe Asn Gly Glu Leu Phe Asn Asp Ser Ile Arg Arg Phe Arg Glu
 1235 1240 1245
 Leu Asn Thr Glu Tyr Gln Glu Leu Ile Lys Lys Glu Leu Tyr Thr Lys
 1250 1255 1260
 Leu Ala Ser Asn Ile Pro Ser Phe Val Leu Ala Ala Ala Gln Ser Ser
 1265 1270 1275 1280
 Glu Val Gly Ile Leu Gln Lys Cys Ile Arg Ser Asn Gly Arg Gly Met
 1285 1290 1295
 Ser Ile Arg Lys Leu Phe Asp Ser Ile Ser Asn Leu Leu Ser Arg Met
 1300 1305 1310
 Cys Pro Cys Met Leu Met Ser Pro Met Ser Val Ala Gln Tyr Ile Asn
 1315 1320 1325
 Val Asn His Asp Lys Phe Asp Leu Val Val Phe Asp Glu Ala Ser Gln
 1330 1335 1340
 Met Pro Thr Cys Glu Ala Val Gly Ala Ile Ala Arg Gly Asn His Val
 1345 1350 1355 1360
 Val Val Val Gly Asp Pro Lys Gln Met Pro Pro Thr Asn Phe Phe Thr
 1365 1370 1375
 Ser Asn Ser Val Asp Glu Glu His Ile Glu Ile Glu Asp Leu Glu Ser
 1380 1385 1390
 Ile Leu Asp Asp Cys Leu Ala Leu Ser Met Pro Ser Lys Tyr Leu Leu
 1395 1400 1405
 Trp His Tyr Arg Ser Lys His Glu Ser Leu Ile Ala Phe Ser Lys Ser
 1410 1415 1420
 Gln Tyr Tyr Asp Asn Lys Leu Leu Thr Phe Gln Ser Arg Met Ile Trp
 1425 1430 1435 1440
 Leu Pro Lys Leu Leu
 1445

<211> 343
 <212> PRT
 <213> B.fragilis

<400> 8668

Ser Val Thr Pro Asn Cys Leu Ile Tyr Ile Lys Ala Ile Lys Met Lys
 1 5 10 15
 Asn Tyr Ile Gln Arg Ile Ile Arg Leu Phe Ala Thr Ser Asp Pro Asp
 20 25 30
 Pro Lys Leu Thr Gly Glu Ile His Arg Trp Leu Leu Asp Gln Glu His
 35 40 45
 Ala Gly Glu Lys Glu Thr Ala Leu His Asp Leu Trp Asn Glu Thr Glu
 50 55 60
 Gly Lys Val Asp Arg Thr Thr Trp Asp Ser Leu Ala Ser Val Tyr Thr
 65 70 75 80
 Lys Val Gly Ala Asn Ser Gly Asp Arg His Gln Pro Arg Ile Arg Phe
 85 90 95
 Ala His Tyr Ala Ala Ala Ile Ala Leu Leu Ile Val Ser Val Ser Val
 100 105 110
 Thr Phe Gln Met Thr Lys Gln His Phe Ala Glu Ala Pro Leu Ile Glu
 115 120 125
 Asn Ile Thr Pro Asp Gly Arg Leu Ser Ser Leu Arg Leu Pro Asp Gly
 130 135 140
 Ser Ile Val Gln Thr Asn Ser Gly Ser Ile Leu Leu Tyr Pro Glu Lys
 145 150 155 160
 Phe Lys Gly Glu Thr Arg Thr Val Tyr Leu Ile Gly Glu Ala Asn Phe
 165 170 175
 Lys Val Lys Lys Asn Ser Gly Gln Pro Phe Ile Val Arg Ser Gly Thr
 180 185 190
 Met Ser Val Thr Ala Leu Gly Thr Glu Phe Asn Val Ala Ala Tyr Pro
 195 200 205
 Glu Glu Asn Glu Met Ile Ala Thr Leu Ile His Gly Lys Ile Lys Val
 210 215 220
 Glu Cys Asp Asn Gly Lys Glu Ser Tyr Ile Val Thr Pro Gly Gln Gln
 225 230 235 240
 Val Thr Tyr Arg Lys Ser Thr Gly Glu Ser Arg Leu Ala Glu Ala Asn
 245 250 255
 Ile Glu Asp Val Thr Ala Trp Gln Lys Gly Met Tyr Val Phe Arg Gly
 260 265 270
 Val Thr Met Ser Glu Ile Leu Asn Glu Leu Glu Arg Arg Tyr Ala Val
 275 280 285
 Thr Phe Gln Tyr Asn Ala Asn Leu Phe Asn Asp Asp Lys Phe Asn Phe
 290 295 300
 Arg Phe Arg Glu Lys Ser Thr Leu Glu Asp Ile Leu Asn Ile Met Gln
 305 310 315 320
 Glu Val Val Gly Gly Phe Ser His Glu Leu Lys Gly Asn Ile Cys Tyr
 325 330 335
 Ile Lys Pro Glu Thr Lys Lys
 340

<210> 8669
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 8669

Met Pro Lys Pro His Trp Val Ile Leu Ala Asn Thr Leu Met Thr Val
 1 5 10 15
 Glu Leu Val Met Thr Thr Phe Cys Asn Ser Lys Lys Val Ala Lys Val

	20		25		30										
Ile	Ser	Ser	Thr	Leu	Gly	Leu	Gln	Lys	Val	Lys	Lys	Ser	Ser	Ile	Ser
	35		40		45										
Val	Ser	Val	Ala	Leu	Gly	Phe	Asp	Ala	Val	Val	Leu	Asn	Pro	Val	
	50		55		60										

<210> 8670
 <211> 289
 <212> PRT
 <213> B.fragilis

<400> 8670

Leu	His	Arg	Pro	Tyr	Val	Ala	Cys	Tyr	Cys	Pro	Asn	Leu	Leu	Arg	Lys
1				5					10					15	
Arg	Arg	Met	Lys	Ile	Ser	Tyr	His	Leu	Phe	Leu	Thr	Ile	Glu	Ile	Val
			20					25					30		
Met	Ile	Leu	Phe	Ile	Tyr	Asp	Lys	Thr	Leu	Asp	Gly	Leu	Leu	Thr	Ala
		35				40					45				
Leu	Phe	Asp	Ala	Tyr	Asn	Arg	Lys	Thr	Phe	Pro	Asp	Val	Leu	Leu	Ser
	50				55					60					
Lys	Gly	Asp	Thr	Leu	Pro	Leu	Phe	Tyr	Asp	Asp	Ile	Phe	Thr	Val	Ile
65				70					75						80
Thr	Asp	Glu	Glu	Lys	Ala	Gly	Arg	Val	Trp	Arg	Gly	Leu	Gln	Lys	Lys
			85					90					95		
Ile	Ser	Ala	Ser	Ala	Leu	Ser	Ala	Ile	Thr	Trp	Cys	Trp	Leu	Ser	Glu
		100						105					110		
Leu	Pro	Glu	Val	Gly	Met	Leu	Leu	Phe	Arg	Tyr	Ile	Arg	Lys	Ala	Ile
		115				120						125			
Asp	Ser	Pro	Val	Ser	Ile	Glu	Thr	Asn	Phe	Gly	Asp	Pro	Asp	Val	Leu
	130					135				140					
Ala	Leu	Ser	Lys	Ile	Trp	Lys	Arg	Val	Asp	Trp	Glu	Arg	Leu	Arg	Met
	145			150					155						160
Leu	Gln	Phe	Val	Arg	Phe	Gln	Lys	Ala	Val	Asp	Gly	Thr	Phe	Phe	Ala
			165					170						175	
Ala	Phe	Glu	Pro	Gln	His	Asn	Ala	Leu	Pro	Leu	Thr	Val	Gly	His	Phe
		180					185						190		
Lys	Asp	Arg	Phe	Ala	Asp	Gln	Arg	Trp	Leu	Ile	Tyr	Asp	Met	Lys	Arg
	195					200						205			
Arg	Tyr	Gly	Phe	Tyr	Tyr	Asp	Leu	His	Thr	Val	Glu	Glu	Val	Thr	Phe
	210				215						220				
Asp	Asp	Asp	Gly	Gln	Ala	Ala	His	Leu	Ile	Thr	Gly	Met	Leu	Asp	Glu
	225			230					235						240
Ser	Leu	Met	Asp	Lys	Asp	Glu	Lys	Leu	Phe	Gln	Gln	Leu	Trp	Lys	Thr
			245					250						255	
Tyr	Phe	Lys	Ser	Ile	Thr	Ile	Lys	Glu	Arg	Leu	Asn	Pro	Arg	Lys	His
		260					265						270		
Lys	Gln	Asp	Met	Pro	Val	Arg	Tyr	Trp	Lys	Tyr	Ile	Thr	Glu	Lys	Gln
	275					280						285			

Lys

<210> 8671
 <211> 373
 <212> PRT
 <213> B.fragilis

<400> 8671

Ile	His	Lys	Phe	Met	Pro	Arg	Thr	Ala	Lys	Lys	Gly	Phe	Thr	Tyr	Tyr
1				5					10					15	

Gly Phe Asp Thr Asp His Phe Tyr Asp Pro Lys Val Lys Arg Leu Lys
 20 25 30
 Asn Lys Phe Gly Met Glu Gly Trp Ala Val Phe His Phe Ile Val Asn
 35 40 45
 Glu Ile His Arg Val Glu Gly Tyr Tyr Met Ile Met Asp Ser Asp Gly
 50 55 60
 Leu Phe Asp Val Ser Asp Tyr Ser Arg Met Asp Glu Gln Arg Ile Ala
 65 70 75 80
 Gly Ile Val Asp Tyr Cys Ala Glu Leu Gly Leu Phe Asp Lys Gly Leu
 85 90 95
 Trp Arg Ser Arg Gln Val Leu Thr Ser Glu Glu Ile Gln Asn Arg Tyr
 100 105 110
 Met Gly Ile Cys Lys Ser Ile His Arg Lys Pro Ser Ile Ser Asp Asp
 115 120 125
 Tyr Leu Leu Leu Asn Ala Ala Ala Pro Ala Ala Thr Ser Ser Pro Gln
 130 135 140
 Val Ala Ala Pro Cys Pro Ala Thr His Thr Ala Pro Val Ala Glu Pro
 145 150 155 160
 Ala Arg Thr Gly Glu Lys Glu Lys Asp Thr Glu Leu Met Gln Ala Ile
 165 170 175
 Ala Asp Phe Lys Arg Arg Leu Gln Glu Pro Glu Ser Ala Ala Gly Val
 180 185 190
 Val Arg Glu Glu Ser Gly Ile Ile Arg Glu Asn Arg Pro Gln Asn Lys
 195 200 205
 Ile Lys Glu Asn Ile Ser Ser Pro Asn Pro Ser Gly Glu Gly Gly Tyr
 210 215 220
 Thr Pro Glu Arg Glu Glu Glu Arg Asn Ser Leu Ser Gly Lys Leu Gln
 225 230 235 240
 Tyr Leu Gly Val Asp Ser Asn Ile Ile Gln Trp Val Arg Leu Leu Lys
 245 250 255
 Ser Arg Tyr Pro Asp Phe Pro Ile Glu Lys Ala Ile Arg Asp Met Glu
 260 265 270
 Gln Ser Asn Phe Gln Leu Thr Lys Glu Asn Tyr Leu Tyr Pro Leu Ile
 275 280 285
 Lys Asn Tyr Ile Ala Lys Tyr Asn Ala Glu His Gly Ser Glu Glu Arg
 290 295 300
 Ala Arg Gln Gln Glu Lys Ile Leu Arg Thr Arg Lys Thr Leu Glu
 305 310 315 320
 Leu Leu Gly Val Pro Val Lys Asp Gln Gln Glu Ile Leu Gln Leu Ala
 325 330 335
 Ser Val Ala Pro Leu Val Leu Asp Thr Ala Leu Lys Glu Thr Trp Gly
 340 345 350
 Asn Lys Lys Ile Lys Ser Pro Thr Met Phe Leu Leu Ser Arg Met Arg
 355 360 365
 Arg Ala Val Pro Ala
 370

<210> 8672

<211> 125

<212> PRT

<213> B.fragilis

<400> 8672

Ile Met Asp Thr Glu Ile Leu Arg Lys Lys Tyr Thr Leu Trp Ser Asn
 1 5 10 15
 Ile Ile Asp Leu Arg Ser Arg Gly Leu Asn Ile Thr Arg Thr Ala Lys
 20 25 30
 Arg Leu Gly Val Ser Arg Asp Thr Val Lys Arg Leu Gln Ser Leu Ser
 35 40 45

Ser Asp Glu Leu Phe Arg Lys Tyr Gln Glu Ser Arg Arg Cys Lys Leu
 50 55 60
 Gln Asn Tyr Glu Gln Ala Val Val Ser Leu Leu Phe Thr Phe Pro Ser
 65 70 75 80
 Thr Ser Ser Ser Arg Val His Asp Tyr Leu Lys Glu His Tyr Pro Asp
 85 90 95
 Phe Pro Asn Val Cys Asp Lys Thr Val Arg Asn Tyr Val Gln Phe Ile
 100 105 110
 Arg Lys Lys His His Leu Pro Phe Arg Ser Cys Arg Leu
 115 120 125

<210> 8673
 <211> 303
 <212> PRT
 <213> B.fragilis

<400> 8673
 Tyr Ile Gly Thr Leu Lys Ser Asp Ser Trp Leu His Arg Phe Leu His
 1 5 10 15
 Asn Gln Pro Leu Lys His Lys Leu Tyr Val Ile Ile Phe Glu Ser Asp
 20 25 30
 Thr Pro Ala Gly Lys Ala Phe Asp Val Thr Leu Ile Ile Cys Ile Leu
 35 40 45
 Leu Ser Ile Leu Leu Ala Ile Ile Glu Ser Leu Gln Gly Leu Pro Ser
 50 55 60
 Trp Leu Ser Thr Pro Phe Ile Val Leu Glu Tyr Leu Phe Thr Val Phe
 65 70 75 80
 Phe Thr Phe Glu Tyr Val Thr Arg Ile Tyr Cys Ser Pro Asn Pro Arg
 85 90 95
 Lys Tyr Ile Phe Ser Phe Phe Gly Ile Val Asp Leu Leu Ala Thr Leu
 100 105 110
 Pro Leu Tyr Leu Ala Phe Phe Leu Pro Gly Ala Arg Tyr Leu Leu Ile
 115 120 125
 Ile Arg Ala Phe Arg Ile Ile Arg Val Phe Arg Ile Phe Lys Leu Phe
 130 135 140
 Asn Phe Trp Leu Glu Gly Glu Arg Leu Leu Thr Ser Leu Arg Glu Ser
 145 150 155 160
 Ser Lys Lys Ile Ala Val Phe Phe Leu Phe Val Val Ile Leu Val Val
 165 170 175
 Ala Ile Gly Thr Leu Met Tyr Met Ile Glu Gly Thr Gln Pro Asn Thr
 180 185 190
 Gln Phe Asn Asn Ile Pro Asn Ser Ile Tyr Trp Ala Ile Val Thr Met
 195 200 205
 Thr Thr Val Gly Tyr Gly Asp Ile Thr Pro Ala Thr Ala Leu Gly Lys
 210 215 220
 Phe Leu Ser Ala Cys Val Met Leu Ile Gly Tyr Thr Ile Ile Ala Val
 225 230 235 240
 Pro Thr Gly Ile Val Ser Ala Ser Met Met Lys Glu Tyr Lys Lys Leu
 245 250 255
 Lys Asp Leu Gln Cys Pro Asn Cys His Lys Thr Gly His Glu Glu Asn
 260 265 270
 Ala Thr Tyr Cys Lys Tyr Cys Gly His Lys Leu Lys Asn Asp Glu Ile
 275 280 285
 Tyr Arg Gln Glu Asn Thr Ala Thr Asp Pro Asp Arg Thr Thr Ser
 290 295 300

<210> 8674
 <211> 149
 <212> PRT

<213> B.fragilis

<400> 8674

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Leu Tyr Val Thr Gly Ile Gly Ser Ile Gly Val Asp Thr Tyr Phe Arg
1          5          10          15
Ser Leu Lys Met His Met Lys Lys Phe Ile Leu Ile Thr Leu Thr Leu
20          25          30
Leu Tyr Ala Val Val Ser Ser Gly Ile Thr Ile Asn Phe His Tyr Cys
35          40          45
Met Gly Arg Leu Ala Asp Val Glu Trp Gly Ser Ala Ser Val Cys Ala
50          55          60
Ser Cys Gly Glu Lys Lys Met Thr Ser His Cys Cys Lys Asp Glu Ala
65          70          75          80
His Tyr Val Lys Leu Ala Val Asp Gln Asp Val Asn His Val Pro Val
85          90          95
Thr Asn Leu Leu Pro Ala Val Thr Glu Leu Leu Pro Val Met Tyr Ser
100          105          110
Ala Phe Ile Pro Leu Glu Ala Glu Ser Leu Arg Arg Ser Val Ala Ser
115          120          125
Phe Asn Phe Pro Pro Trp Gln Thr Asp Ile Pro Leu Phe Val His His
130          135          140
Cys Thr Tyr Leu Ile
145

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<210> 8675

<211> 88

<212> PRT

<213> B.fragilis

<400> 8675

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Met Arg Arg Thr Ser Asp Ile Pro Pro Thr Thr Thr Phe Pro Ile Asp
1          5          10          15
Pro Pro Pro Met Pro Asp Met Ser Leu Pro Glu Glu Leu Pro Ala Glu
20          25          30
Thr Pro Gly Val Pro Ala Gly Ala Gly Leu Pro Ile Pro Pro Ile Pro
35          40          45
Asp Met Pro Leu Pro Glu Glu Ser Ala Gly Gly Ile Glu Ala Thr Asp
50          55          60
Val Thr Glu Val Asp Glu Gly Ala Ala Cys Ala Asp Glu Ala Glu Lys
65          70          75          80
Arg Phe Ser Ala Asn Cys Ser Ser
85

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<210> 8676

<211> 68

<212> PRT

<213> B.fragilis

<400> 8676

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Lys Ser Thr Thr Gly Ser Thr Ser Ile Tyr Lys Glu Thr Gly Asn Phe
1          5          10          15
Gly Lys Gly Lys Gly Leu Leu His Lys Arg Glu Thr Asn Ala Leu Ser
20          25          30
Lys Gly Arg Lys Arg Pro Val Glu Arg Glu Trp Gln Thr Ser Pro Lys
35          40          45
Gly Lys Ile Ala Arg Pro Lys Glu Gly Ser Gln Pro Ala Glu Glu Lys
50          55          60
Lys Pro Thr Ile
65

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<210> 8677
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 8677
 Asn Arg Arg Thr Asp Ala Asp Ser Arg Trp Gly Thr Tyr Pro Pro Glu
 1 5 10 15
 Val Arg Phe Ser Pro Pro Val Pro Tyr Gln Met Phe Thr Glu Arg Lys
 20 25 30
 Met Ser Val Val Leu Phe Leu Asn Asp Cys Ser Arg Lys Thr Lys Ile
 35 40 45
 Leu Ser Phe Arg Ile Asn Lys Pro Thr Gln Lys Asn Glu Thr Cys Phe
 50 55 60
 Ala Cys Leu Ser Thr Val Lys Lys Tyr Gly Arg Ser His Ala Ala Leu
 65 70 75 80
 Phe Tyr Ser Arg Leu
 85

<210> 8678
 <211> 138
 <212> PRT
 <213> B.fragilis

<400> 8678
 Thr Val Asp Ala Ser Arg Gly Glu Trp Arg Tyr Arg Ile Lys Asp Arg
 1 5 10 15
 Asn Pro Leu Asn Asn Ser His Met Tyr Phe Ile His Ser Ile Gln Thr
 20 25 30
 Tyr Ala Ser Val Asn Arg Lys Gly Ser Glu Leu Gln Glu Tyr Val Leu
 35 40 45
 Gln Leu Lys Asp Ser Leu Ile Lys Asn Arg Glu Phe Leu Asp Asp Leu
 50 55 60
 Lys Glu Glu Leu His Cys Arg Ile Gly Glu Leu Asp Ala Lys Tyr Pro
 65 70 75 80
 Arg Thr Gln Pro Leu His Leu Asp Ala Ala Ser Cys Arg Glu Ile Ile
 85 90 95
 Gln Trp Ile Ile His Val Lys Gly Lys Pro Asp Asn Leu Ile Cys Ile
 100 105 110
 Ile Ser Ile Thr Lys Val Arg Asn Leu Leu Gly Glu Gly Thr Gly Phe
 115 120 125
 Phe Pro Arg Ala Lys Thr Gly Gly Lys Gly
 130 135

<210> 8679
 <211> 164
 <212> PRT
 <213> B.fragilis

<400> 8679
 Asn Ala Leu Ala Met Ile Lys Leu Arg Phe Ser Leu Leu Met Ala Leu
 1 5 10 15
 Leu Val Val Ala Val Ser Val Phe Ala Asp Asn Ala Pro Ala Lys Val
 20 25 30
 Gln Thr Ala Leu Lys Lys Met Tyr Pro Lys Ala Asp Gly Ile Ala Trp
 35 40 45
 Ser Gln Asp Gly Gly Tyr Tyr Cys Ala Asp Phe Met Met Asn Gly Tyr
 50 55 60

Glu Lys Asn Val Trp Phe Asn Ala Gln Gly Gln Trp Gln Met Thr Gln
 65 70 75 80
 Thr Glu Trp Gly Asp Thr Asp Glu Leu Ser Ala Thr Val Tyr Asn Ala
 85 90 95
 Tyr Ala Ser Gly Pro Tyr Ser Gly Trp Gln Val Glu Asp Val Thr Tyr
 100 105 110
 Val Glu Phe Pro Lys Trp Gln Pro Ile Ile Val Ile Lys Val Gly Gln
 115 120 125
 Gln Asn Val Asp Ile Gln Tyr Gln Leu Phe Tyr Ser Ser Asn Gly Thr
 130 135 140
 Leu Leu Arg Thr Arg Asn Val Ser Tyr Met Asp Asp Ile Leu Gly Pro
 145 150 155 160
 Gly Thr Phe Leu

<210> 8680
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 8680
 Asn His Thr Ala Met Lys Thr Lys Phe Val Lys Thr Thr Asp Arg Lys
 1 5 10 15
 Gly Thr Tyr Ile Ile Glu Gly Ser Ser Asp Gly Gln Phe Phe Asn Ile
 20 25 30
 Lys Arg Phe Ile Cys Gln Val Gln Lys Gln Glu Thr Glu Lys Glu Thr
 35 40 45
 Gln Glu Leu Ala Asp Phe Ile Leu Ser Lys Leu Asn Ser
 50 55 60

<210> 8681
 <211> 119
 <212> PRT
 <213> B.fragilis

<400> 8681
 Ala Val Thr Ala Cys Arg Arg Glu Cys Glu Asn Lys Gln Thr Ile Lys
 1 5 10 15
 Asn Pro Ile Leu Ile Lys Met Glu Ile Arg Gly Lys Ile Ile Ala Val
 20 25 30
 Leu Pro Val Lys Asp Gly Ile Gly Lys Thr Thr Gly Asn Glu Trp Lys
 35 40 45
 Ser Arg Glu Phe Val Leu Glu Thr Glu Glu Ser Lys Pro Gln Ser Val
 50 55 60
 Cys Leu Gln Leu Met Asn Ala Asn Ile Glu Arg Tyr Ala Val Glu Val
 65 70 75 80
 Gly Met Thr Val His Val Lys Phe Asp Ile Ser Ala Arg Gln Trp Glu
 85 90 95
 Asn Arg Trp Phe Asn Thr Leu Thr Ala Trp Glu Val Thr Val Ile Lys
 100 105 110
 Gln Lys Glu Glu Gln Pro Ala
 115

<210> 8682
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 8682

Ser Asn Ala Ala Ser Leu Val Ile Leu Ala Met Ile Met Arg Phe Asn
 1 5 10 15
 Lys Gly Tyr His Leu Pro Ala Asn Val Gly Ile Lys Val Arg Asn Arg
 20 25 30
 Ser Leu Ser Asp Ile Asn Ser Ile Lys Leu Ile Thr Lys Ser His Lys
 35 40 45
 Lys Met Lys Met Tyr Pro Val Phe Cys Ala Leu Ile Ala Tyr Leu
 50 55 60

<210> 8683

<211> 450

<212> PRT

<213> B.fragilis

<400> 8683

Thr Asn Asn Phe Leu Tyr Phe Cys Val Asp Ile Thr Phe Leu Arg Gln
 1 5 10 15
 Tyr Asn Arg Lys Leu Asn Ile Ile Met Ala Lys Gln Phe Lys Pro Glu
 20 25 30
 Thr Leu Cys Val Gln Ala Gly Trp Thr Pro Lys Lys Gly Glu Pro Arg
 35 40 45
 Val Leu Pro Ile Tyr Gln Ser Thr Thr Phe Lys Tyr Glu Thr Ser Glu
 50 55 60
 Gln Met Ala Arg Leu Phe Asp Leu Glu Asp Ser Gly Tyr Phe Tyr Thr
 65 70 75 80
 Arg Leu Gln Asn Pro Thr Asn Asp Ala Val Ala Ala Lys Ile Ala Ala
 85 90 95
 Leu Glu Gly Gly Val Gly Ala Met Leu Thr Ser Ser Gly Gln Ala Ala
 100 105 110
 Asn Phe Tyr Ala Ile Phe Asn Ile Cys Gln Ala Gly Asp His Phe Val
 115 120 125
 Cys Ser Ser Ala Ile Tyr Gly Gly Thr Phe Asn Leu Phe Gly Val Thr
 130 135 140
 Met Lys Lys Leu Gly Ile Asp Val Thr Phe Val Ser Pro Asp Ala Gly
 145 150 155 160
 Glu Glu Glu Ile Ser Ala Ala Phe Arg Pro Asn Thr Lys Ala Leu Phe
 165 170 175
 Gly Glu Thr Ile Ser Asn Pro Ser Leu Glu Val Leu Asp Ile Glu Lys
 180 185 190
 Phe Ala Arg Ile Ala His Ser His Gly Val Pro Leu Ile Val Asp Asn
 195 200 205
 Thr Phe Pro Thr Pro Ile Asn Cys Arg Pro Phe Glu Trp Gly Ala Asp
 210 215 220
 Ile Val Val His Ser Thr Thr Lys Tyr Met Asp Gly His Ala Thr Ser
 225 230 235 240
 Val Gly Gly Cys Ile Val Asp Ser Gly Asn Phe Asp Trp Glu Ala His
 245 250 255
 Ala Asp Lys Phe Pro Gly Leu Cys Thr Pro Asp Glu Ser Tyr His Gly
 260 265 270
 Leu Thr Tyr Thr Lys Ala Phe Gly Lys Gly Ala Tyr Met Thr Lys Ala
 275 280 285
 Thr Ala Gln Leu Met Arg Asp Leu Gly Ser Ile Gln Ser Pro Gln Asn
 290 295 300
 Ala Phe Leu Leu Asn Leu Gly Leu Glu Thr Leu His Leu Arg Met Pro
 305 310 315 320
 Gln His Cys Gly Asn Ala Gln Lys Val Ala Glu Tyr Leu Ala Gln Asn
 325 330 335
 Asp Lys Val Ala Trp Val Asn Tyr Cys Gly Leu Pro Gly Asn Lys Tyr
 340 345 350

Tyr Glu Leu Ala Gln Lys Tyr Met Pro Asn Gly Ser Cys Gly Val Ile
 355 360 365
 Ser Phe Gly Leu Lys Gly Gly Arg Glu Leu Ser Ile Lys Phe Met Asp
 370 375 380
 Ser Leu Lys Leu Ala Ala Ile Val Thr His Val Ala Asp Ala Arg Thr
 385 390 395 400
 Cys Val Leu His Pro Ala Ser His Thr His Arg Gln Leu Thr Asp Glu
 405 410 415
 Gln Leu Ile Glu Ala Gly Val Arg Pro Asp Leu Ile Arg Leu Ser Val
 420 425 430
 Gly Ile Glu Asn Ala Asp Asp Ile Ile Ala Asp Ile Glu Gln Ala Leu
 435 440 445
 Asn Ala
 450

<210> 8684
 <211> 227
 <212> PRT
 <213> B.fragilis

<400> 8684
 Lys Gly Asn Leu Arg Met Met Leu Asn Phe Asp Phe Val Leu Arg Leu
 1 5 10 15
 Leu Val Ala Gly Ile Leu Gly Ala Ile Ile Gly Leu Asp Arg Glu Tyr
 20 25 30
 Arg Ala Lys Glu Ala Gly Tyr Arg Thr His Phe Leu Val Ser Leu Gly
 35 40 45
 Ser Ala Leu Ile Met Ile Val Ser Gln Tyr Gly Phe Gln Glu Ile Ile
 50 55 60
 Lys Glu Asn Ser Val Thr Leu Asp Pro Ser Arg Val Ala Ala Gln Val
 65 70 75 80
 Val Ser Gly Ile Gly Phe Ile Gly Ala Gly Thr Ile Ile Phe Gln Lys
 85 90 95
 Gln Ile Val Arg Gly Leu Thr Thr Ala Ala Gly Ile Trp Ala Thr Ala
 100 105 110
 Gly Ile Gly Leu Ala Val Gly Ala Gly Met Tyr Val Ile Gly Ile Ala
 115 120 125
 Ala Met Val Leu Thr Leu Ile Gly Leu Glu Val Leu Ser Tyr Leu Phe
 130 135 140
 Lys Ser Ile Gly Met Lys Ser Ser Met Ile Thr Phe Ser Thr Asp Asn
 145 150 155 160
 Lys Gln Val Leu Lys Gly Val Ala Asp Arg Phe Asn Ser Lys Asp Tyr
 165 170 175
 Leu Ile Val Ser Tyr Gln Met Asp Thr Gln Lys His Gly Ser Ile Glu
 180 185 190
 Thr Tyr Gln Val Thr Met Ile Ile Lys Ser Lys Arg Asn Asn Asp Glu
 195 200 205
 Gly His Leu Leu Ser Leu Ile Gln Glu Phe Pro Glu Val Thr Val Glu
 210 215 220
 Arg Ile Glu
 225

<210> 8685
 <211> 91
 <212> PRT
 <213> B.fragilis

<400> 8685
 His Gln Ile Leu Met Thr Met Ser Asp Phe Asn Pro Arg Pro Ser Asp

1	5	10	15
Lys Leu Thr Ala Ser Glu Arg Lys Glu Leu Asp Thr Ser Glu Phe Gly			
20	25	30	
Ile Pro Gln Leu Arg Glu Phe Pro Ile His Asp Ala Ala His Val Arg			
35	40	45	
Ala Ala Glu Ala Tyr Phe Arg Tyr Ala Pro Glu Glu Tyr Lys Ala Gln			
50	55	60	
Leu Ala Arg Asn Ile Leu Ala Lys Ala His Leu Glu Gly Val Asn Val			
65	70	75	80
Lys Ser Pro Ala Ile Leu Glu Trp Ala Glu Lys			
85	90		

<210> 8686

<211> 478

<212> PRT

<213> B.fragilis

<400> 8686

Ala Pro Ala Tyr Pro Asn Asp Ser Cys Cys Arg Asn Ile Ser Ile Thr			
1	5	10	15
Ile Met Ser Thr Lys His Ala Lys Ala Ala Glu Lys Phe Leu Glu Asn			
20	25	30	
Pro Val Met Ala Ala Trp His Asn Glu Thr Leu Trp Met Val Arg Ala			
35	40	45	
Lys Arg Asp Lys Met Ser Lys Glu Val Pro Glu Trp Glu Glu Leu Arg			
50	55	60	
Asp Lys Ala Cys Ala Leu Lys Leu Tyr Ser Asn Ser His Leu Glu Glu			
65	70	75	80
Leu Leu Leu Glu Phe Glu Lys Asn Ala Thr Ala Asn Gly Ala Ile Val			
85	90	95	
His Trp Ala Lys Asp Ala Glu Glu Tyr Arg Ala Ile Val Tyr Glu Ile			
100	105	110	
Leu Ser Ser His Gly Val Lys His Phe Val Lys Ser Lys Ser Met Leu			
115	120	125	
Ala Glu Glu Cys Glu Leu Asn Pro Phe Leu Ile Glu Lys Gly Ile Asp			
130	135	140	
Val Val Glu Ser Asp Leu Gly Glu Arg Ile Leu Gln Leu Met Asn Leu			
145	150	155	160
Ala Pro Ser His Ile Val Leu Pro Ala Ile His Ile Lys Arg Glu Gln			
165	170	175	
Val Gly Glu Leu Phe Glu Lys Glu Met Gly Thr Glu Lys Gly Asn Phe			
180	185	190	
Asp Pro Thr Tyr Leu Thr His Ala Ala Arg Lys Asn Leu Arg Asn Ile			
195	200	205	
Phe Leu Asn Ala Glu Ala Ala Met Thr Gly Ala Asn Phe Ala Val Ala			
210	215	220	
Ser Thr Gly Asp Ile Val Val Cys Thr Asn Glu Gly Asn Ala Asp Met			
225	230	235	240
Gly Thr Ser Cys Pro Thr Leu Asn Ile Ala Ala Phe Gly Met Glu Lys			
245	250	255	
Ile Val Pro Asp Met Glu Ala Leu Gly Val Phe Thr Arg Leu Leu Ala			
260	265	270	
Arg Ser Ala Thr Gly Gln Pro Ile Thr Thr Tyr Thr Ser Gln Tyr Arg			
275	280	285	
Asn Pro Arg Glu Gly Gly Glu Tyr His Ile Ile Ile Val Asp Asn Gly			
290	295	300	
Arg Ser Ala Leu Leu Ala His Pro Asp His Ile Lys Thr Leu Asn Cys			
305	310	315	320
Ile Arg Cys Gly Ala Cys Met Asn Thr Cys Pro Val Tyr Arg Arg Ser			

325 330 335
 Gly Gly Tyr Ser Tyr Thr Tyr Phe Ile Pro Gly Pro Ile Gly Ile Asn
 340 345 350
 Leu Gly Met Ala His Asp Pro Glu Lys Tyr Tyr Asp Asn Leu Ser Ala
 355 360 365
 Cys Ser Leu Cys Met Ser Cys Ser Asp Val Cys Pro Ala Lys Val Asp
 370 375 380
 Leu Ala Glu Gln Ile Tyr Lys Trp Arg Gln Asp Leu Asp Lys Ile Gly
 385 390 395 400
 Lys Ala Asn Thr Gly Lys Lys Ile Met Ser Gly Gly Met Lys Val Leu
 405 410 415
 Met Asp His Pro Thr Leu Phe Asn Ala Ala Leu Trp Ala Ala Pro Val
 420 425 430
 Val Asn His Leu Pro Arg Phe Met Lys Tyr Asn Asp Leu Asp Ala Trp
 435 440 445
 Gly Lys Gly Arg Glu Leu Pro Lys Phe Ala Gly Glu Ser Phe Asn Glu
 450 455 460
 Met Trp Lys Lys Asn Lys Val Gln Gly Lys Glu Glu Asn Lys
 465 470 475

<210> 8687
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 8687
 Lys Leu Leu Tyr Met Ser Phe Ser Gly Phe Val Phe Asp Met Ile Arg
 1 5 10 15
 Arg Asn Lys Glu Asn Arg Asp Leu Leu Thr Leu Arg Arg Glu Arg Met
 20 25 30
 Lys Asp Leu Gln Gly Lys Met Tyr Arg Lys Gly Thr Leu Gln Asn Pro
 35 40 45
 Asn Val Thr Leu Glu Glu Leu Glu Lys Ile Glu Lys Ala Thr Arg Glu
 50 55 60
 Lys Glu Lys Ala Glu Thr Gln Tyr Tyr Leu Arg Ala Thr Leu Ile Phe
 65 70 75 80
 Leu Thr Val Thr Ala Ile Leu Ala Leu Ile Leu Trp Trp Ile Leu
 85 90 95

<210> 8688
 <211> 150
 <212> PRT
 <213> B.fragilis

<400> 8688
 Val Ile Val His Lys Gln Leu Tyr Thr Asn Thr Ile Ala His Pro Pro
 1 5 10 15
 Ser Phe Trp His Glu Ala Cys Asn Ile Ile Ile Val Ser Lys Trp Leu
 20 25 30
 Thr Glu Lys Gln Thr Ser Phe Ile Asn Leu Lys Leu Thr Ile Met Lys
 35 40 45
 Lys Val Leu Val Ala Val Ala Leu Val Met Gly Leu Gly Ser Ser Val
 50 55 60
 Ala Phe Ala Gln Asn Ala Glu Asn Ala Asn Ala Val Val Ala Thr Ala
 65 70 75 80
 Gln Ala Pro Gln Asp Glu Tyr Thr Lys Ile Glu Val Lys Asp Leu Pro
 85 90 95
 Ala Ala Val Thr Glu Ala Leu Gly Lys Ala Tyr Pro Glu Ser Thr Ile
 100 105 110

Lys Glu Ala Ser Val Thr Thr Lys Glu Glu Gly Lys Phe Tyr Lys Val
 115 120 125
 Val Val Thr Gln Lys Asp Gly Thr Asp Val Thr Val Val Leu Asn Glu
 130 135 140
 Lys Gly Glu Glu Val Lys
 145 150

<210> 8689

<211> 543

<212> PRT

<213> B.fragilis

<400> 8689

Lys Lys Thr Gln Asn Val Met Lys Lys Asn Leu Leu Ile Leu Val Ala
 1 5 10 15
 Leu Leu Thr Ser Ala Thr Ile Ser Ala Gln Asn Gly Gly Thr Ile Met
 20 25 30
 Lys Lys Tyr Glu Asn Gln Leu Pro Gln Ala Gly Arg Gly Asn Val His
 35 40 45
 Val Ala Tyr Gln Gly Lys Ala Ile Asp Gln Met Ile Tyr Asp Phe Met
 50 55 60
 Glu Glu Gln Gly Ile Pro Gly Met Thr Leu Ala Ile Val Gln Ala Pro
 65 70 75 80
 Tyr Ile Pro Arg Val Ala Gly Tyr Gly Val Thr Asp Leu Glu Lys Gly
 85 90 95
 Asn Leu Ala Ala Lys Thr Leu Trp Pro Ile Gly Pro Ile Ser Gln
 100 105 110
 Gly Tyr Ala Ala Val Ala Val Met Gln Leu Tyr Glu Lys Gly Lys Leu
 115 120 125
 Asp Leu Asn Asp Pro Ile Gly Lys Tyr Leu Lys Asp Ile Pro Glu Asn
 130 135 140
 Trp Lys Pro Ile Ser Ile Leu Gln Leu Met Gln His Ser Ser Gly Ile
 145 150 155 160
 Ala Asp Tyr Arg Asn Glu Lys Gly Phe Asp Val Ser Ala Asp Tyr Arg
 165 170 175
 Pro Glu Gln Leu Ile Glu Thr Val Ala Ala Ile Pro Leu Ala Phe Glu
 180 185 190
 Pro Gly Thr Asp Val Lys Gln Ser Ala Thr Asn Phe Leu Leu Leu Thr
 195 200 205
 Ser Ile Ile Glu Lys Ala Gly Lys Met Ser Tyr His Asp Phe Val Lys
 210 215 220
 Lys Tyr Gln Ile Asp Tyr Leu Gly Leu Lys Gln Thr Phe Phe Gly Glu
 225 230 235 240
 Asp Leu Ala Lys Val Lys Gln Glu Asp Val Thr Leu Thr Gly Asn Val
 245 250 255
 His Gln Thr Phe Lys Lys Asp Lys Asp Tyr Ile Asn Pro Ser Glu Thr
 260 265 270
 Thr Thr Gly Tyr Val Glu Lys Glu Gly Arg Leu Val Ala Ala Pro Ala
 275 280 285
 Val Ser Pro Thr Ala Leu Lys Gly Phe Ser Asp Ile Trp Ala Ser Ala
 290 295 300
 Glu Asn Val Ser His Trp Asp Ile Gly Leu Ala Gly Ser Ala Leu Ile
 305 310 315 320
 Glu Lys Pro Glu Asn Arg Asp Met Val Tyr Lys Pro Thr Arg Leu Ala
 325 330 335
 Asn Gly Lys Val Val Pro Ala Met Ala Gly Trp Gln Phe Tyr Asn His
 340 345 350
 Asn Gly Leu Met Asp Ile Lys Gly Asn Val Ser Gly His Ser Ala Phe
 355 360 365

Leu Ser Arg Phe Thr Asp Ala Ser Glu Leu Val Cys Val Thr Leu Leu
 370 375 380
 Ala Asn Lys Glu Gly Val Asp Leu Thr Asn Leu Gly Arg Arg Ile Ala
 385 390 395 400
 Ala Ala Phe Asp Ser Asp Lys Met Gly Thr Gly Ala Asn Asp Asn Leu
 405 410 415
 Leu Tyr Thr Tyr Glu Ser Gln Phe Ser Val Pro Glu Thr Met Thr Arg
 420 425 430
 Ile Glu Gln Thr Leu His Thr Met Gly Val Pro Val Phe Ala Lys Phe
 435 440 445
 Asp His Gly Lys Asn Ala Glu Glu Val Gly Leu Gln Leu Arg Pro Asn
 450 455 460
 Gln Val Ile Val Phe Gly Ser Pro Lys Val Gly Thr Lys Leu Met Gln
 465 470 475 480
 Asp Asn Pro Ser Ile Ser Ile Glu Leu Pro Leu Lys Ile Ser Val Trp
 485 490 495
 Glu Asp Lys Asn Gly Ser Val Trp Ala Thr Phe Pro Gln Met Arg Thr
 500 505 510
 Met Ala Ala Glu Tyr Gly Leu Glu Ala Glu Pro Val Ile Gly Lys Met
 515 520 525
 Gln Glu Leu Leu Glu Lys Ile Val Ile Lys Gly Ala Ser Val Tyr
 530 535 540

<210> 8690

<211> 300

<212> PRT

<213> B.fragilis

<400> 8690

Ile Ser His Gln Thr Gln Tyr Asp Met Asn Lys Lys Ser Ser Leu Asn
 1 5 10 15
 Asn Leu Leu Tyr Ile Gln Glu His Arg Ser Cys Arg Asn Tyr Leu Glu
 20 25 30
 Lys Val Glu Asn Gly Phe Lys Tyr Ile Glu Phe Ser His Glu Glu Val
 35 40 45
 Ile Leu Glu Lys Glu Ile Ser Trp Asn Tyr Leu Leu Phe Val Leu Glu
 50 55 60
 Gly Glu Cys Ile Ile Asn Cys Asn Gln Phe Arg Glu Arg Leu Phe Gln
 65 70 75 80
 Ala Asn Cys Met Val Leu Leu Pro Lys Thr Ala Met Val Glu Ile Lys
 85 90 95
 Val Ile Ala Gly Thr Arg Leu Leu Ser Leu Ser Phe Asp Val Pro Leu
 100 105 110
 Asn Val Cys Asp Lys Phe Ile Leu Gln Ser Leu Thr Gly Leu Cys Arg
 115 120 125
 Lys Leu Asp Tyr Asn Phe Gln Ser Leu Ala Ile Arg Tyr Pro Leu Pro
 130 135 140
 Pro Tyr Leu Glu Ile Val Thr Tyr Cys Leu Thr Asn Lys Met Asp Cys
 145 150 155 160
 Gly His Phe His Thr Leu Leu Gln Gln Glu Leu Phe Phe Leu Leu Arg
 165 170 175
 Gly Phe Tyr Leu Lys Glu Glu Leu Ala Leu Leu Phe His Pro Ile Ile
 180 185 190
 Ser Ala Glu Leu Thr Phe Lys Asp Phe Val Ile Gly Asn Tyr Phe Lys
 195 200 205
 Val Ser Asn Val Asn Asp Leu Ile Ser Leu Ser Asn Met Cys Lys Ser
 210 215 220
 Ser Phe Tyr Cys Lys Phe Lys Glu Val Phe Gly Met Thr Ala Lys Gln
 225 230 235 240

Trp Leu Leu Lys Gln Arg Asn Thr His Ile Leu Asn Lys Val Met Thr
 245 250 255
 Ser Glu Thr Thr Val Gly Glu Leu Met Glu Glu Phe Arg Phe Glu Ser
 260 265 270
 Gln Ala His Phe Thr His Tyr Cys Lys Gln His Phe Asn Cys Thr Pro
 275 280 285
 Arg Glu Leu Ile Met Lys Tyr Gln Val Val Asn Gln
 290 295 300

<210> 8691
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 <212> PRT
 <213> B.fragilis

<400> 8691
 Leu Asn Gly Gln Thr Ser Gly Glu Cys Asp Ile Val Arg Arg Trp Phe
 1 5 10 15
 Thr Trp Arg Ala Phe Arg Ser Glu Ser Pro Leu Tyr Cys Pro Asp Val
 20 25 30
 Ile Lys Asn Lys Leu Leu Arg Gly Leu Leu Lys Lys Ser Pro Phe Pro
 35 40 45
 Ser His Ile Ile Lys Lys Lys Asp Val Ile Leu His Ala Lys Lys
 50 55 60

<210> 8692
 <211> 281
 <212> PRT
 <213> B.fragilis

<400> 8692
 Asn Arg Phe Asn Cys Lys Thr Thr Gln Asp His Leu Ser Ile His Asn
 1 5 10 15
 His Tyr Arg Met Ala Lys Lys His Arg Lys Glu Ser Leu Asp Ala Leu
 20 25 30
 Phe Arg Glu Lys Val Leu Leu Glu Met Leu Lys Ile Ala Gly Val Gly
 35 40 45
 Met Trp Thr Tyr Ser Thr Glu Thr Gly Arg Leu Arg Tyr Ile Gly Phe
 50 55 60
 Ala Asp Thr Ile His Arg His Asp Glu Leu Gln Tyr Val Asp Pro Ala
 65 70 75 80
 Asp Tyr Leu Lys Leu Met Asn Gly Glu Asp Leu Gln Thr Val Thr Gln
 85 90 95
 Phe Met Ala Asp Ile His Ala Gly Arg Pro Pro Gln Glu Gly Ile Arg
 100 105 110
 Tyr Lys Ile His Gly Asn Gly Glu Asp Phe Tyr Leu Glu Asn His Val
 115 120 125
 Val Thr Cys Gln Pro Leu Gly Asn Gly Phe Tyr Tyr Leu Lys Gly Tyr
 130 135 140
 Val Lys Asn Ile Thr Ala Gln Val Met Glu Ala Asn Arg Leu Cys Ile
 145 150 155 160
 Glu Lys Glu Arg Thr Glu Gln Ala Asp Arg Leu Arg Ser Ala Phe Phe
 165 170 175
 Ala His Val Ser Arg Glu Leu Arg Gly Pro Leu Asn Arg Ile Glu Glu
 180 185 190
 Leu Ala Ser Gln Met Val His Ala Glu Ser Val Glu Glu Arg Glu Glu
 195 200 205
 Cys Phe His Arg Ile Gln Glu Asn Arg Arg Met Ala Met Lys Ile Ala
 210 215 220
 Asp Ala Leu His Ala Val Ser Gln Leu Pro Val Ser Thr Tyr Glu Pro

225 230 235 240
 Tyr His Ser Pro Met Gln Leu Cys Leu Ile Tyr Arg Asp Leu Leu Met
 245 250 255
 Glu Asn Gly Tyr Ser His Asn Pro Glu Asp Gly Glu Gln Glu Glu Asn
 260 265 270
 Ala Asn Phe Leu Ser Leu Leu Phe Ser
 275 280

<210> 8693

<211> 519

<212> PRT

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<400> 8693

Asn Lys Ile Lys Ala Arg Ile Thr Met Glu Asp Ile Asn Lys Ala Tyr
 1 5 10 15
 Ala Thr Phe Ala Glu Arg Asp Arg Ile Ala Ser Leu Gly Gly Gly Ala
 20 25 30
 Ala Lys Ile Asp Ile Gln His Glu Ser Gly Lys Met Thr Ala Arg Glu
 35 40 45
 Arg Ile Asp Met Leu Leu Asp Lys Gly Thr Phe Val Glu Leu Asp Lys
 50 55 60
 Leu Met Val His Arg Cys Thr Asn Tyr Gly Met Asp Arg Asn Lys Ile
 65 70 75 80
 Pro Gly Asp Gly Val Val Ser Gly Tyr Gly Lys Ile Asp Gly Arg Gln
 85 90 95
 Val Phe Val Tyr Ala Tyr Asp Phe Thr Val Tyr Gly Gly Ser Leu Ser
 100 105 110
 Ala Ser Asn Ala Lys Lys Ile Val Lys Val Gln Gln Leu Ala Leu Lys
 115 120 125
 Asn Gly Ala Pro Ile Ile Ala Leu Asn Asp Ser Gly Gly Ala Arg Ile
 130 135 140
 Gln Glu Gly Ile Glu Ser Leu Ser Gly Tyr Ala Asp Ile Phe Tyr Gln
 145 150 155 160
 Asn Thr Met Ala Ser Gly Val Ile Pro Gln Ile Ser Ala Ile Leu Gly
 165 170 175
 Pro Cys Ala Gly Gly Ala Cys Tyr Ser Pro Ala Leu Thr Asp Phe Ile
 180 185 190
 Phe Met Val Lys Glu Lys Ser His Met Phe Val Thr Gly Pro Asp Val
 195 200 205
 Val Lys Thr Val Ile His Glu Val Ser Lys Glu Glu Leu Gly Gly
 210 215 220
 Ala Met Thr His Ser Ser Lys Ser Gly Val Thr His Phe Met Ala Asn
 225 230 235 240
 Thr Glu Glu Glu Leu Leu Met Ser Ile Arg Glu Leu Leu Ser Phe Leu
 245 250 255
 Pro Gln Asn Asn Met Asp Glu Ala Arg Lys Gln Asn Cys Thr Asp Asp
 260 265 270
 Val Asn Arg Glu Asp Ala Ser Leu Asn Ser Ile Val Pro Ser Asp Pro
 275 280 285
 Asn Val Pro Tyr Asp Met Lys Glu Ile Ile Glu Arg Val Val Asp Gly
 290 295 300
 Gly Tyr Phe Phe Glu Val Met Gln Asn Phe Ala Lys Asn Ile Ile Ile
 305 310 315 320
 Gly Phe Ala Arg Met Gly Gly Arg Ser Val Gly Ile Val Ala Asn Gln
 325 330 335
 Pro Ala Tyr Leu Ala Gly Val Leu Asp Ile Asp Ala Ser Asp Lys Ala
 340 345 350
 Ser Arg Phe Ile Arg Phe Cys Asp Cys Phe Asn Ile Pro Leu Ile Thr

355 360 365
 Phe Glu Asp Val Pro Gly Phe Leu Pro Gly Tyr Thr Gln Glu Asn Asn
 370 375 380
 Gly Ile Ile Arg His Gly Ala Lys Ile Val Tyr Ala Phe Ala Glu Ala
 385 390 395 400
 Thr Val Pro Lys Leu Thr Val Ile Thr Arg Lys Ala Tyr Gly Gly Ala
 405 410 415
 Tyr Ile Val Met Asn Ser Lys Gln Thr Gly Ala Asp Val Asn Phe Ala
 420 425 430
 Tyr Pro Ser Ala Glu Ile Ala Val Met Gly Ala Glu Gly Ala Val Asn
 435 440 445
 Ile Leu Phe Arg Lys Ala Asp Ala Glu Thr Lys Ala Gln Glu Leu Asn
 450 455 460
 Ala Tyr Lys Glu Lys Phe Ala Thr Pro Tyr Gln Ala Ala Glu Leu Gly
 465 470 475 480
 Phe Ile Asp Glu Ile Ile Leu Pro Lys Gln Thr Arg Lys Arg Leu Ile
 485 490 495
 Gln Ala Leu Glu Met Thr Glu Asn Lys Met Gln Thr Asn Pro Pro Lys
 500 505 510
 Lys His Gly Asn Met Pro Leu
 515

<210> 8694
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 <213> B.fragilis

<400> 8694

Ile Lys Asn Lys Lys Glu Phe Lys Met Lys Arg Arg Ile Lys Ser Ala
 1 5 10 15
 Gln Ser Ile Leu Trp Val Leu Leu Leu Ile Leu Ser Ala Ser Cys Ser
 20 25 30
 Lys Asp Glu Ile Gln Ile Val Asp Gln Asp Thr Ser Trp Gln Met Asp
 35 40 45
 Asn Lys Tyr Ile Glu Glu Asp Ile Arg Glu Gln Leu Gly Ile Asp Pro
 50 55 60
 Phe Thr Asp Leu Val Tyr Leu Gly Tyr Tyr Gly Asn Pro Tyr Thr Gln
 65 70 75 80
 Leu Glu Ala Ile Asn Asp Leu Val Asn Thr Thr Leu Val Gly Lys Asn
 85 90 95
 Glu Leu Ser Phe Lys Val Lys Val Thr Lys Pro Tyr Lys Glu Asp Ile
 100 105 110
 Lys Val Asn Leu Met Lys Glu Asp Lys Leu Val Thr Asp Phe Pro Glu
 115 120 125
 Met Ala Glu Gly Ile Pro Leu Phe Pro Ser Glu Asn Cys Thr Phe Glu
 130 135 140
 Gly Gly Val Leu Lys Ala Gly Glu Leu Glu Thr Thr Val Lys Leu Thr
 145 150 155 160
 Ile Lys Asp Val Glu Lys Leu Asn Asn Leu Ser Gly Tyr Val Met Ala
 165 170 175
 Ile Lys Leu Thr Met Glu Gly Ser His Glu His Leu Ala Ile Ala Arg
 180 185 190
 Thr Arg Ser Ala Tyr Phe Val Lys Leu Asn Leu Ser Ile Arg Leu Asp
 195 200 205
 Asn Ile Asp Ser Ser Asn Lys Lys Ile Glu Gly Lys Gly Phe Asn Lys
 210 215 220
 Glu Ile Ser Phe Lys Ser Asp Ile Arg Pro Asp Lys Leu Gly Ser Leu
 225 230 235 240
 Asn Asp Gly Asn Phe Thr Ala Asn Asn Trp Tyr Thr Ser Asn Ala Asn

				245					250					255			
Asn	Tyr	Leu	Thr	Ile	Ile	Leu	Pro	Glu	Lys	Gln	Ser	Leu	Lys	Gly	Phe		
			260					265					270				
Arg	Leu	Asp	Thr	Asn	Thr	Ser	Pro	Ser	Gly	Ser	Tyr	Met	Leu	Lys	Ser		
		275					280					285					
Cys	Arg	Val	Met	Val	Glu	Thr	Pro	Asp	Gly	Asn	Trp	Val	Asn	His	Gly		
	290					295					300						
Val	Phe	Asp	Arg	Lys	Ser	Met	Asp	Gly	Ile	Ala	Tyr	Ile	Ser	Phe	Lys		
305					310					315					320		
Lys	Pro	Val	Glu	Cys	Thr	Lys	Val	Arg	Phe	Glu	Asn	Met	Met	Ala	Phe		
				325					330					335			
Asn	Gly	Arg	Phe	Ser	Val	Asp	Val	Asn	Glu	Val	Thr	Ala	Phe	Arg			
		340						345					350				

<210> 8695

<211> 1094

<212> PRT

<213> B.fragilis

<400> 8695

Asn	Ser	Phe	Lys	Ser	Met	Asn	Phe	Tyr	Arg	Leu	Lys	Ser	Ile	Phe	Phe		
1				5					10					15			
Ile	Ile	Phe	Ser	Cys	Phe	Ile	Leu	Gln	Thr	Ala	Ala	Phe	Ala	Gln	Asn		
		20						25					30				
Asn	Val	Lys	Ile	Thr	Ile	Lys	Lys	Asn	Ile	Thr	Leu	Gln	Glu	Ala			
	35					40					45						
Leu	Arg	Glu	Val	Glu	Lys	Gln	Ser	Asp	Tyr	Leu	Ile	Ala	Phe	Asn	Glu		
	50				55					60							
Ser	Lys	Leu	Glu	Lys	Thr	Lys	Arg	Val	Asn	Leu	Asn	Ile	Asn	Ala	Glu		
65				70					75						80		
Ser	Leu	Asp	Lys	Thr	Leu	Ala	Ser	Ile	Leu	Ser	Gly	Thr	Gly	Leu	Ser		
			85					90						95			
Tyr	Lys	Ile	Lys	Asp	Lys	Tyr	Ile	Met	Ile	Ile	Pro	Gln	Ser	Lys	Val		
		100					105						110				
Glu	Val	Glu	Ser	Lys	Lys	Leu	Ser	Gly	Ile	Val	Lys	Asp	Asp	Lys	Gly		
	115					120						125					
Asp	Pro	Leu	Ile	Gly	Val	Asn	Val	Ser	Phe	Lys	Gly	Ser	Pro	Thr	Gly		
	130				135					140							
Thr	Val	Thr	Gly	Leu	Asp	Gly	Arg	Phe	Ser	Ile	Leu	Ala	Ala	Lys	Gly		
145				150					155						160		
Asn	Ile	Ile	Glu	Phe	Ser	Tyr	Val	Gly	Tyr	Thr	Thr	Gln	Tyr	Ile	Thr		
			165					170						175			
Val	Gly	Asp	Ala	Ser	Ser	Leu	Thr	Val	Val	Leu	Glu	Glu	Asp	Ala	Lys		
		180					185						190				
Ala	Leu	Asp	Glu	Val	Val	Val	Thr	Ala	Leu	Gly	Ile	Lys	Arg	Ala	Glu		
	195					200						205					
Lys	Ala	Leu	Ser	Tyr	Ser	Val	Gln	Gln	Val	Lys	Ser	Asp	Ala	Ile	Asn		
	210				215						220						
Asp	Val	Lys	Asp	Ala	Asn	Phe	Val	Asn	Gly	Leu	Thr	Gly	Lys	Val	Ala		
225				230					235					240			
Gly	Val	Ser	Ile	Asn	Arg	Ser	Ser	Ser	Gly	Ile	Gly	Gly	Ala	Thr	Arg		
			245				250							255			
Val	Val	Met	Arg	Gly	Ala	Lys	Ser	Ile	Val	Gly	Asn	Asn	Asn	Val	Leu		
	260						265					270					
Tyr	Val	Val	Asp	Gly	Met	Pro	Ile	Gly	Asn	Pro	Ser	Lys	Gly	Glu	Ile		
	275					280					285						
Asn	Asn	Asp	Tyr	Ser	Thr	Pro	Gly	Gly	Gly	Glu	Gly	Ile	Ser	Asp	Phe		
	290				295				300								
Asn	Pro	Glu	Asp	Ile	Glu	Ser	Leu	Ser	Ile	Leu	Thr	Gly	Pro	Ala	Ala		

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

Asn Asn Lys Ile Asn Ile Asp Ala Thr Val Tyr Leu Thr Asp Thr Tyr
 785 790 795 800
 Asn Gln Thr Phe Leu Ser Ser Met Ser Pro Ala Ser Gly Tyr Ser Gly
 805 810 815
 Phe Tyr Val Gln Ala Gly Lys Val Arg Asn Lys Gly Ile Glu Leu Ser
 820 825 830
 Leu Gly Tyr Asn Asp Arg Phe Gly Lys Val Gly Tyr Ala Thr Asn Leu
 835 840 845
 Thr Tyr Thr Ala Asn Arg Asn Lys Ile Met Lys Met Val His Asp Tyr
 850 855 860
 Lys Asn Pro Ser Asp Gly Ser Leu Phe Ser Ile Thr Glu Leu Thr Leu
 865 870 875 880
 Gln Asp Lys Gly Gly Val Tyr Leu Arg Glu Lys Asp Ala Ile Gly Asp
 885 890 895
 Val Tyr Val Lys Gly Ile Leu Ala Arg Gly Lys Asp Gly Lys Leu Ile
 900 905 910
 Glu Glu Glu Gly Gly Tyr Lys Val Asp Arg Ser Gln Arg Ile Lys Ile
 915 920 925
 Gly Ser Val Asn Pro Asp Phe Ser Ile Gly Trp Arg His Asn Val Thr
 930 935 940
 Trp Asn Asn Ile Thr Leu Asp Leu Leu Phe Asn Gly Arg Phe Gly Gly
 945 950 955 960
 Ile Val Thr Ser Ser Thr Gln Ala Phe Leu Asp Asp Tyr Gly Val Ser
 965 970 975
 Lys Asp Thr Tyr Lys Ala Arg Gln Asn Gly Gly Val Trp Val Asn Gly
 980 985 990
 Thr Gln Tyr Asp Ala Glu Lys Tyr Tyr Thr Thr Ile Gly Gly Glu Gln
 995 1000 1005
 Leu Met Ala Tyr Tyr Ala Tyr Lys Ala Thr Asn Ile Arg Leu Gln Glu
 1010 1015 1020
 Ala Ser Leu Ser Tyr Thr Leu Pro Gly Lys Trp Phe Ala His Val Ile
 1025 1030 1035 1040
 Asn Arg Leu Thr Val Ser Ala Ile Gly Arg Asn Leu Trp Met Ile Tyr
 1045 1050 1055
 Asn Lys Ala Pro Phe Leu Ile Gln Ile Thr Ser Ser Thr Gly Thr Tyr
 1060 1065 1070
 Asn Arg Gly Asp Val Phe Met Pro Pro Ser Leu Arg Ser Val Gly Phe
 1075 1080 1085
 Ser Val Lys Ile Glu Leu
 1090

<210> 8696
 <211> 98
 <212> PRT
 <213> B.fragilis

<400> 8696
 Ser Thr Cys Phe Ala Val Arg Ser Ala Ser Glu Lys Thr Ala Met Leu
 1 5 10 15
 Val Ile Ser Ile Ser Arg Gln Glu Arg Ile Thr Leu Thr Ala Ile Ser
 20 25 30
 Pro Arg Leu Ala Thr Lys Ile Leu Leu Ile Ile Phe Ile Ser Gln Leu
 35 40 45
 Asn Ala Tyr Thr Tyr Ser Arg Phe Ser Thr Leu Arg Thr Tyr Val His
 50 55 60
 Pro Met Lys Thr Gln Tyr Phe Tyr Asp Leu Gly Leu Asn Asn Asp Ala
 65 70 75 80
 Phe Phe Pro Asn Pro Arg Gly Glu Asn Ala Leu Ile His Glu Trp Gln
 85 90 95

Val Phe

<210> 8697

<211> 179

<212> PRT

<213> B.fragilis

<400> 8697

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Met Ile Leu Asn Asn Glu Ser Asn Lys Lys Lys Lys Phe Glu Gln Phe
1           5           10           15
Phe Ile Met Thr Tyr Pro Lys Val Lys Ala Phe Ala Trp Lys Leu Leu
          20           25           30
Lys Ser Glu Glu Asp Ala Glu Asp Ile Ala Gln Asp Ile Phe Ala Lys
          35           40           45
Leu Trp Thr Asn Pro Glu Ile Trp Glu Asn Gln Glu Thr Trp Asn Ser
          50           55           60
Tyr Ile Tyr Thr Met Val Arg Asn His Ile Tyr Asn Phe Leu Lys His
65           70           75           80
Lys Ser Ile Arg Gln Thr Tyr Gln Glu Gln Cys Thr Lys Glu Glu Pro
          85           90           95
Ala Ile Ser Glu Thr Asp Ile His Asp Gln Leu Tyr Ala Lys Glu Ser
          100          105          110
Glu Leu Leu Ile Lys Leu Thr Ile Ala Asn Met Pro Glu Gln Arg Arg
          115          120          125
Lys Ile Phe Arg Met Ser Arg Thr Gln Glu Lys Ser Asn Gln Glu Ile
          130          135          140
Ala Asp Glu Leu Asp Ile Ser Ile Arg Thr Val Glu Arg His Ile Tyr
145           150           155           160
Leu Ala Leu Ile Asp Leu Lys Lys Val Leu Leu Thr Leu Phe Phe Phe
          165          170          175
Tyr Leu Gly

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<210> 8698

<211> 769

<212> PRT

<213> B.fragilis

<400> 8698

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Pro Leu Leu Lys Arg Ile Ile Met Ala Lys Ile Thr Lys Glu Ala Ala
1           5           10           15
Leu Leu Tyr His Ser Gln Gly Lys Pro Gly Lys Ile Glu Val Val Pro
          20           25           30
Thr Lys Pro Tyr Ser Thr Gln Thr Asp Leu Ser Leu Ala Tyr Ser Pro
          35           40           45
Gly Val Ala Glu Pro Cys Leu Glu Ile Glu Lys Asn Pro Gln Asp Ala
          50           55           60
Tyr Lys Tyr Thr Ala Lys Gly Asn Leu Val Ala Val Ile Ser Asn Gly
65           70           75           80
Thr Ala Val Leu Gly Leu Gly Asp Ile Gly Ala Leu Ser Gly Lys Pro
          85           90           95
Val Met Glu Gly Lys Gly Leu Leu Phe Lys Ile Tyr Ala Gly Ile Asp
          100          105          110
Val Phe Asp Ile Glu Val Asn Glu Lys Asp Pro Asp Lys Phe Ile Glu
          115          120          125
Ala Val Lys Ala Ile Ala Pro Thr Phe Gly Gly Ile Asn Leu Glu Asp
          130          135          140
Ile Lys Ala Pro Glu Cys Phe Glu Ile Glu Arg Arg Leu Lys Glu Glu

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145		150		155		160									
Leu	Asp	Ile	Pro	Val	Met	His	Asp	Asp	Gln	His	Gly	Thr	Ala	Ile	Ile
		165							170					175	
Ser	Ser	Ala	Gly	Leu	Val	Asn	Ala	Leu	Gln	Val	Ala	Gly	Lys	Lys	Ile
		180							185					190	
Glu	Asp	Val	Lys	Ile	Val	Val	Asn	Gly	Ala	Gly	Ala	Ser	Ala	Val	Ser
		195							200					205	
Cys	Thr	Lys	Leu	Tyr	Val	Ser	Leu	Gly	Ala	Arg	Leu	Glu	Asn	Ile	Val
		210							215					220	
Met	Leu	Asp	Ser	Lys	Gly	Val	Ile	Ser	Lys	Ala	Arg	Thr	Asp	Leu	Asn
		225												235	240
Glu	Gln	Lys	Arg	Tyr	Phe	Ala	Thr	Asp	Arg	Thr	Asp	Ile	His	Thr	Leu
				245					250					255	
Ala	Glu	Ala	Ile	Lys	Asp	Ala	Asp	Val	Phe	Leu	Gly	Leu	Ser	Lys	Gly
				260					265					270	
Asn	Thr	Leu	Ser	Gln	Asp	Met	Val	Arg	Ser	Met	Ala	Pro	Met	Pro	Ile
		275							280					285	
Val	Phe	Ala	Leu	Ala	Asn	Pro	Thr	Pro	Glu	Ile	Ser	Tyr	Glu	Asp	Ala
		290							295					300	
Met	Ala	Ala	Arg	Pro	Asp	Val	Leu	Met	Ala	Thr	Gly	Arg	Ser	Asp	Tyr
		305												315	320
Pro	Asn	Gln	Ile	Asn	Asn	Val	Ile	Gly	Phe	Pro	Tyr	Ile	Phe	Arg	Gly
				325					330					335	
Ala	Leu	Asp	Thr	Gln	Ala	Lys	Ala	Ile	Asn	Glu	Glu	Met	Lys	Ile	Ala
				340					345					350	
Ala	Val	His	Ala	Ile	Ala	Asn	Leu	Ala	Lys	Gln	Pro	Val	Pro	Asp	Val
				355					360					365	
Val	Asn	Glu	Ala	Tyr	His	Val	Asn	Asn	Phe	Thr	Phe	Gly	Pro	Glu	Tyr
				370					375					380	
Phe	Ile	Pro	Lys	Pro	Val	Asp	Pro	Arg	Leu	Ile	Thr	Glu	Val	Ser	Ile
		385							390					395	400
Ala	Val	Ala	Arg	Ala	Ala	Met	Glu	Ser	Gly	Val	Ala	Arg	Lys	Asn	Ile
				405					410					415	
Glu	Asn	Trp	Asp	Asp	Tyr	Lys	Thr	His	Leu	Arg	Glu	Leu	Met	Gly	Gln
				420					425					430	
Glu	Ser	Gln	Leu	Thr	Arg	Gln	Leu	Tyr	Asp	Thr	Ala	Arg	Arg	Asn	Pro
				435					440					445	
Gln	Arg	Val	Val	Phe	Ala	Glu	Gly	Gly	His	Pro	Asn	Met	Leu	Lys	Ala
		450							455					460	
Ala	Val	Glu	Ala	Lys	Ser	Glu	Gly	Ile	Cys	His	Pro	Ile	Ile	Leu	Gly
		465							470					475	480
Asn	Glu	Glu	Arg	Ile	Glu	Lys	Leu	Ala	Lys	Glu	Leu	Asp	Leu	Ser	Leu
				485					490					495	
Asp	Gly	Ile	Glu	Ile	Ile	Asn	Leu	Arg	His	Asp	Arg	Glu	Ala	Glu	Arg
				500					505					510	
Arg	Glu	Arg	Tyr	Ala	His	Ile	Leu	Ser	Gln	Lys	Arg	Ala	Arg	Glu	Gly
				515					520					525	
Ala	Thr	Tyr	Glu	Glu	Ala	Asn	Asp	Lys	Met	Phe	Glu	Arg	Asn	Tyr	Phe
				530					535					540	
Gly	Met	Met	Met	Val	Glu	Thr	Gly	Asp	Ala	Asp	Ala	Phe	Ile	Thr	Gly
		545							550					555	560
Leu	Tyr	Thr	Lys	Tyr	Ser	Asn	Thr	Ile	Lys	Val	Ala	Lys	Glu	Val	Ile
				565					570					575	
Gly	Ile	Arg	Pro	Glu	Tyr	Lys	His	Phe	Gly	Thr	Met	His	Ile	Leu	Asn
				580					585					590	
Ser	Lys	Lys	Gly	Thr	Tyr	Phe	Leu	Ala	Asp	Thr	Leu	Ile	Asn	Arg	His
				595					600					605	
Pro	Asp	Thr	Ser	Thr	Leu	Ile	Asp	Ile	Ala	Lys	Leu	Ala	Asp	Gln	Thr
				610					615					620	

145 150 155 160
 165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235 240
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395 400
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475 480
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555 560
 565 570 575
 580 585 590
 595 600 605
 610 615 620

Val Arg Phe Phe Asn His Thr Pro Val Ile Ser Met Leu Ser Tyr Ser
 625 630 635 640
 Asn Phe Gly Ser Asp Gln Ala Gly Ser Pro Leu Lys Val His Glu Ala
 645 650 655
 Val Ala Tyr Met Gln Gln Glu Tyr Pro Glu Leu Ala Ile Asp Gly Glu
 660 665 670
 Met Gln Val Asn Phe Ala Met Asn Arg Glu Leu Arg Asp Ser Lys Tyr
 675 680 685
 Pro Phe Thr Arg Leu Asn Gly Lys Asp Val Asn Thr Leu Val Phe Pro
 690 695 700
 Asn Leu Ser Ser Ala Asn Ala Gly Tyr Gln Leu Leu Gln Ala Met Asp
 705 710 715 720
 Pro Asp Thr Glu Phe Ile Gly Pro Ile Gln Met Gly Leu Asn Lys Pro
 725 730 735
 Ile His Phe Thr Asp Ile Glu Ser Ser Val Arg Asp Ile Val Asn Ile
 740 745 750
 Thr Ala Val Ala Val Ile Asp Ala Ile Val Glu Lys Lys Lys Ala Asn
 755 760 765
 Lys

<210> 8699

<211> 317

<212> PRT

<213> B.fragilis

<400> 8699

Leu Ile Leu Lys Thr Lys Lys Asp Leu Ile Ser Trp Cys Phe Ser Ile
 1 5 10 15
 Phe Leu Leu Val Leu Lys Leu Asn Arg Ile Gln Thr Ile Met Gln Lys
 20 25 30
 Leu Asn Gln Gln Pro Asp Ile Cys Pro Tyr Phe Ser Pro Glu Phe Lys
 35 40 45
 Val Ile Pro Gln Tyr Ile Ile Met Lys Glu Gly Glu Cys Met Glu Leu
 50 55 60
 Asn Asn Arg Thr Thr Ser Phe Phe Ile Phe Ile Leu Ser Gly Glu Ile
 65 70 75 80
 Thr Ile Ser Phe Glu Gln Tyr Thr Asn Arg Ser Val Leu Glu Asn Glu
 85 90 95
 Met Phe Phe Leu Pro Lys Asn Asn Cys Phe Lys Trp Lys Ala Val Thr
 100 105 110
 Gln Thr Val Leu Ile Leu Thr Gly Tyr Asn Ala Thr Ile Phe Pro Cys
 115 120 125
 Thr Ser Val Arg Ala Arg Ile Leu Tyr Lys Ile Lys Ala Gly Val Lys
 130 135 140
 Phe Asp Cys Arg Gly Val Val Met Lys Asp Glu Val Lys Val Val Val
 145 150 155 160
 Asn Gln Met Lys His Tyr Leu Glu Ser Gly Ile Asn Cys His His Met
 165 170 175
 Tyr Ile Leu Lys His Lys Glu Leu Tyr Leu Met Phe Lys His Phe Tyr
 180 185 190
 Thr Tyr Glu Glu Ile Ile Gln Ile Phe Tyr Leu Ile Leu Gly Ser Asn
 195 200 205
 Pro Leu Phe Asn Glu Arg Val Leu Asp Asn Tyr Leu Lys Val Lys Thr
 210 215 220
 Val Lys Glu Leu Ala Gly Leu Leu Gly Tyr Gly Ile Lys Thr Phe Glu
 225 230 235 240
 Lys Leu Phe Arg Glu Asn Phe Asp Glu Ser Pro Tyr Lys Trp Met Gln
 245 250 255

Lys Arg Lys Ala Leu Gln Ile Gln Gln Arg Leu Met Asn Pro Ala Ile
 260 265 270
 Ser Leu Lys Gln Ile Met Tyr Glu Phe Lys Phe Ala Thr Ser Ser His
 275 280 285
 Phe Asn Phe Tyr Cys Lys Gln His Leu Gly Ala Ala Pro Met Gln Ile
 290 295 300
 Arg Asn Ser Asn Lys Asp Asp Asn Met Ser Thr Leu Pro
 305 310 315

<210> 8700

<211> 770

<212> PRT

<213> B.fragilis

<400> 8700

Thr Ser Ile Lys Arg Asn Glu Val Leu Thr Lys Tyr Thr Tyr His Thr
 1 5 10 15
 Met Ser His Leu Pro Thr Leu Ile Ala Asp Leu Ala Leu Ile Leu Met
 20 25 30
 Ser Ala Ser Ile Ile Thr Leu Leu Phe Lys Trp Leu Lys Gln Pro Leu
 35 40 45
 Val Leu Gly Tyr Ile Val Ala Gly Leu Leu Ala Gly Pro Tyr Val Arg
 50 55 60
 Ile Phe Pro Thr Val Gly Asp Met Glu Asn Ile Asn Thr Trp Ala Glu
 65 70 75 80
 Ile Gly Val Val Phe Leu Leu Phe Ala Leu Gly Leu Glu Phe Ser Phe
 85 90 95
 Lys Lys Leu Met Asn Val Gly Ser Ala Ala Phe Ile Thr Ala Thr Thr
 100 105 110
 Glu Val Ile Ser Met Leu Leu Ile Gly Phe Met Val Gly His Leu Leu
 115 120 125
 Gly Trp Ser Thr Met Asn Ser Val Phe Leu Gly Gly Met Leu Ser Met
 130 135 140
 Ser Ser Thr Thr Ile Ile Ile Lys Ala Phe Asp Asp Leu Gly Leu Arg
 145 150 155 160
 Ser Gln Arg Phe Thr Gly Ile Val Phe Gly Thr Leu Val Val Glu Asp
 165 170 175
 Leu Ile Ala Ile Leu Met Met Val Ile Leu Ser Thr Met Ala Val Ser
 180 185 190
 Lys Glu Phe Val Gly Glu Glu Leu Leu Met Ser Val Leu Lys Val Ala
 195 200 205
 Phe Phe Leu Ile Leu Trp Phe Leu Val Gly Ile Phe Ile Leu Pro Phe
 210 215 220
 Phe Leu Lys Lys Ala Lys Arg Leu Met Asn Asn Glu Thr Leu Leu Ile
 225 230 235 240
 Val Ser Leu Gly Leu Cys Leu Ala Met Val Val Leu Ala Thr Arg Thr
 245 250 255
 Gly Phe Ser Ala Ala Leu Gly Ala Phe Ile Met Gly Ser Ile Leu Ala
 260 265 270
 Glu Thr Val Glu Ala Glu His Ile Glu His Ile Ile Gln Pro Val Lys
 275 280 285
 Asp Leu Phe Gly Ala Ile Phe Phe Val Ser Val Gly Met Leu Val Asn
 290 295 300
 Pro Ser Val Leu Leu Gln Tyr Ala Trp Pro Val Val Ile Ile Thr Leu
 305 310 315 320
 Val Thr Leu Val Gly Lys Ser Ile Phe Ser Ser Leu Gly Val Leu Leu
 325 330 335
 Ser Gly Glu Pro Leu Lys Val Ser Val Lys Ser Gly Phe Ser Leu Ala
 340 345 350

Gln Ile Gly Glu Phe Ala Phe Ile Ile Ala Gly Leu Gly Ala Ser Leu
 355 360 365
 Lys Val Leu Asp Pro Phe Val Pro Pro Ile Ile Val Ala Val Ser Val
 370 375 380
 Ile Thr Thr Phe Thr Thr Pro Tyr Phe Ile Arg Leu Ala Asn Pro Phe
 385 390 395 400
 Ser Glu Trp Leu Tyr Lys Val Leu Ser Pro Arg Thr Arg Glu Phe Leu
 405 410 415
 Asp Arg Tyr Ala Ser Gly Lys Lys Thr Val Asn His Asp Ser Asp Trp
 420 425 430
 Lys Arg Leu Leu Lys Thr Ile Val Gly Arg Val Ile Ile Tyr Ser Val
 435 440 445
 Leu Leu Thr Ala Ile Trp Leu Leu Ser Val Gln Thr Val Tyr Pro Thr
 450 455 460
 Ile Asn Gly Met Phe Asp Ser Pro Gly Arg Trp Leu Ser Val Val Met
 465 470 475 480
 Cys Leu Leu Thr Leu Leu Leu Met Thr Pro Phe Leu Trp Ala Leu Val
 485 490 495
 Ser Asp Lys Tyr Asn Ser Pro Asp Val Phe Leu Lys Leu Trp Asn Asp
 500 505 510
 Asp Asn Tyr Asn His Gly Arg Leu Val Ala Leu Ile Leu Phe Arg Val
 515 520 525
 Ser Val Ala Val Phe Phe Ile Ala Gly Val Val Ile Ser Tyr Phe Ser
 530 535 540
 Leu Asn Tyr Gly Ile Gly Ile Val Ile Ala Val Ala Val Leu Gly Leu
 545 550 555 560
 Ile Leu Leu Leu Arg Glu Asn Leu Thr Gln Tyr Ser His Leu Glu Asn
 565 570 575
 His Phe Leu Thr Asn Leu Asn Gly Arg Glu Glu Ala Ala Arg Asn Arg
 580 585 590
 Tyr Pro Leu Lys Ser Arg Phe Asn Ser Glu Phe Ser Asp Lys Asp Ile
 595 600 605
 Glu Leu Thr Ser Val Trp Val Ser Pro Tyr Ser Ser Tyr Ile Gly Lys
 610 615 620
 Ser Leu Glu Glu Leu Pro Phe Arg Arg Glu Phe Gly Val Asn Val Val
 625 630 635 640
 Gly Ile Val Arg Gly Glu Arg Arg Ile Tyr Ile Pro Gln Ser Asp Glu
 645 650 655
 Cys Ile Tyr Pro Gln Asp Lys Leu Ile Val Val Gly Thr Asp Gly Gln
 660 665 670
 Leu Gln Lys Phe Arg Ser Glu Leu Asp Ile Arg Gln Asp Phe Pro Asp
 675 680 685
 Glu Lys Asn Val Arg Gln Glu Val Thr Leu His Ser Phe Thr Val Asp
 690 695 700
 Glu Glu Ser Pro Leu Leu Asn Lys Ser Ile Ala Gln Ser Arg Leu Gly
 705 710 715 720
 Lys Gln Tyr Asp Ser Leu Ile Val Ala Ile Glu Arg Glu Asp Glu Leu
 725 730 735
 Ile Ser Met Asn Gln Ser Thr Val Phe Arg Leu Gly Asp Leu Val Trp
 740 745 750
 Ile Val Gly Asp Arg Glu Lys Ile Arg Gln Leu Leu Met Arg Lys Lys
 755 760 765
 His Val
 770

<210> 8701

<211> 121

<212> PRT

<213> B.fragilis

<400> 8701

Tyr Arg Ile Asn Met Lys Thr Leu Phe Leu Gln Tyr Pro Ala Cys Ser
 1 5 10 15
 Thr Cys Gln Lys Ala Lys Lys Trp Leu Thr Glu Asn Asn Ile Glu Tyr
 20 25 30
 Thr Asn Arg Leu Ile Val Asp Asp Asn Pro Thr Val Glu Leu Lys
 35 40 45
 Ala Trp Ile Pro Leu Ser Gly Leu Pro Val Lys Lys Phe Phe Asn Thr
 50 55 60
 Ser Gly Val Val Tyr Lys Glu Leu Lys Leu Ser Ser Lys Leu Pro Thr
 65 70 75 80
 Met Thr Glu Glu Glu Gln Ile Ala Leu Leu Ala Thr Asn Gly Lys Leu
 85 90 95
 Val Lys Arg Pro Leu Val Val Thr Glu Arg Phe Val Leu Val Gly Phe
 100 105 110
 Lys Pro Glu Glu Trp Glu Lys Leu Lys
 115 120

<210> 8702

<211> 68

<212> PRT

<213> B.fragilis

<400> 8702

Tyr Lys Ile Lys Tyr Leu Tyr Tyr Leu Leu Ile Arg Ile Glu Val Leu
 1 5 10 15
 Glu His Glu Ile Gln Phe Phe Met Phe Gln Asn Val His Met Met Thr
 20 25 30
 Val Tyr Ser Gly Leu Lys Ile Met Leu His Leu Ile His Tyr Tyr Phe
 35 40 45
 Asp Phe Val Leu His His Tyr Ser Thr Ala Ile Glu Leu His Ala Gly
 50 55 60
 Leu Tyr Phe Ile
 65

<210> 8703

<211> 277

<212> PRT

<213> B.fragilis

<400> 8703

Glu Leu Thr Lys Ala Thr Lys His Pro Ile Met Phe Gly Trp Phe Asn
 1 5 10 15
 Ala Trp Gln Pro Asp Gly Ala Gly Lys Tyr Pro Arg Leu Ser Leu Leu
 20 25 30
 Pro Asp Ser Met Asp Val Val Ser Ile Trp Gly Asn Trp His Ser Leu
 35 40 45
 Ser Glu Glu Lys Ile Lys Glu Leu Arg Ser Val Gln Ala Lys Gly Thr
 50 55 60
 Lys Val Ile Ile Gly Trp Ile Ile Glu Asp Ile Gly Asp Gln Ile Lys
 65 70 75 80
 Trp Gly Arg Asp Gln Trp Pro Ala Asp Asp Thr Gln Ala Ile Lys Glu
 85 90 95
 Tyr Ala Gln Ala Ile Val Asp Thr Ile Asn Lys Tyr Gly Tyr Asp Gly
 100 105 110
 Phe Asp Tyr Asp Tyr Glu Pro Ser Tyr Ala Ser Pro Phe Lys Pro Gly
 115 120 125
 Asn His Cys Gly Asn Leu Thr Ser Cys Ser Arg Asp Tyr Asn Lys Glu

116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

130		135		140
Lys Glu Ile Leu Phe Met	Lys Thr Met Arg Glu Leu Leu Gly Pro Asp			
145		150		155
Lys Leu Phe His Leu Asn Gly Ser Ile His Trp Leu Asp Pro Arg Ala				160
		165		170
Ala Gln Tyr Phe Asp Arg Phe Val Val Gln Ser Tyr Asn Gly Ser Ala				175
		180		185
Ser Ser Phe Glu Arg Trp Thr Asn Asp Ile Gln Asn Arg Leu Asn Ile				190
		195		200
Lys Pro Glu Gln Leu Val Phe Thr Glu Ser Phe Gln Asn Lys Pro Gly				205
		210		215
Ala Arg Ser Arg Phe Pro Gly Thr Tyr Ala Gly Tyr Val Ala Ser Lys				220
225		230		235
Gln Gly Asn Val Gly Gly Ile Gly Val Phe His Ile Asn Glu Asp Ala				240
		245		250
Phe Glu Asp Glu Ala Tyr Val Asn Ile Arg Lys Ala Ile Ser Ile Met				255
		260		265
Asn Pro Pro Val Lys				270
		275		

<210> 8704

<211> 296

<212> PRT

<213> B.fragilis

<400> 8704

Phe Thr Lys Lys Thr Tyr Phe Cys Arg Gln Asn Lys Glu His Asp Met	
1	5
Glu Lys Arg Asn Pro Leu Thr Leu Thr Leu Asp Gln Pro Phe Val Ala	
	20
Gly Thr Asp Asp Phe Ser Pro Phe Tyr Asn Arg Leu His Lys Leu Asn	
	35
Cys Ala Ile Ile Leu Tyr Cys Arg Ala Gly Arg Gly Thr Met Ala Ile	
	50
Asp Leu Lys Lys Tyr Glu Ile Thr Val Asn Thr Gln Val Val Leu Leu	
65	70
Pro Gly Ala Val Ile Ser Leu Asp Glu Lys Ser Asp Asp Phe Arg Val	
	85
Ser Phe Phe Ala Ser His Ile Glu Met Phe Arg Glu Ala Cys Ile Arg	
	100
Phe Glu Pro Ser Phe Phe His Phe Ile Lys Glu Lys Pro Cys Tyr Thr	
	115
Leu Pro Ser Glu Phe Thr Ala Pro Ile Asn Gly Leu Leu His Ala Thr	
	130
Ser Ala Ile Tyr Ala Asp Thr Asp His Arg Phe Arg Asn Gln Ile Ala	
145	150
Arg Asn His Leu Gln Ser Phe Leu Leu Asp Val Tyr Asp Lys Val His	
	165
Arg Leu Phe Thr His Lys Glu Ile Glu Gly Gly Ser Arg Pro Asn Glu	
	180
Leu Phe His Lys Phe Val Ala Leu Val His Glu Tyr Cys Cys Ser Gln	
	195
Arg Asp Val Val Phe Tyr Ala Gly Lys Leu Cys Ile Ser Thr Lys Tyr	
	210
Leu Thr Ser Ile Cys Arg Ser Leu Thr Gly His Ser Ala Lys Lys Val	
225	230
Ile Asp Asp Phe Thr Ala Leu Glu Ile Lys Val Leu Leu Gln Ser Thr	
	245
Asp Leu Ser Ile Gln Glu Ile Ala Asp Arg Leu Asn Phe Pro Asp Gln	
	250
	255

	260		265		270
Ser	Tyr	Leu	Gly	Arg	Tyr
	275		280		285
Glu	Tyr	Arg	Ala	Glu	Leu
	290		295		

<210> 8705
 <211> 194
 <212> PRT
 <213> B.fragilis

<400> 8705

Asn	Ser	Lys	Lys	Val	Ile	Met	Leu	Lys	Ile	Leu	Val	Thr	Tyr	Ala	Val
1				5					10					15	
Gln	Gly	Glu	Phe	Thr	Glu	Ile	Lys	Trp	Pro	Asp	Val	Glu	Val	Tyr	Tyr
			20					25					30		
Val	Arg	Thr	Gly	Ile	Gly	Lys	Val	Lys	Ser	Ala	Phe	His	Leu	Ser	Glu
		35					40					45			
Ala	Ile	Gln	Gln	Val	Lys	Pro	Asp	Ile	Val	Ile	Asn	Gln	Gly	Thr	Ala
	50					55					60				
Gly	Thr	Ile	Asn	His	Gln	Val	Gly	Asp	Val	Phe	Val	Cys	Arg	His	Phe
65					70					75					80
Val	Asp	Arg	Asp	Met	His	Lys	Met	Thr	Gly	Leu	Gly	Met	Glu	Tyr	Arg
				85					90					95	
Ile	Asp	Ser	Ser	Glu	Leu	Leu	Ala	Ala	Arg	Gly	Phe	Cys	Gln	His	Trp
			100					105						110	
Thr	Glu	Ser	Ala	Thr	Cys	Asn	Thr	Gly	Asp	Ser	Phe	Leu	Thr	Glu	Leu
		115					120						125		
Thr	Asp	Ile	Glu	Gly	Asp	Val	Val	Asp	Met	Glu	Ala	Tyr	Ala	Gln	Ala
	130					135					140				
Phe	Val	Cys	Arg	Ala	Lys	Glu	Ile	Pro	Phe	Ile	Ser	Val	Lys	Tyr	Val
145					150					155					160
Ser	Asp	Val	Ile	Gly	Gln	Asn	Ser	Val	Lys	His	Trp	Glu	Asp	Arg	Leu
				165					170					175	
Glu	Asp	Ala	Arg	Ala	Gly	Leu	Ser	His	Phe	Phe	Asn	Val	Leu	Lys	Glu
			180					185					190		
Ser	Ile														

<210> 8706
 <211> 394
 <212> PRT
 <213> B.fragilis

<400> 8706

Gln	Arg	Lys	Lys	Asn	Pro	Met	Ile	Ile	Arg	Thr	Ile	Leu	Asp	Thr	Asp
1				5					10					15	
Leu	Tyr	Lys	Phe	Thr	Thr	Ser	Tyr	Ala	Tyr	Ile	Lys	Leu	Phe	Pro	Tyr
			20					25					30		
Ala	Ile	Gly	Thr	Phe	Ser	Phe	Lys	Asp	Arg	Asp	Gly	Thr	Glu	Tyr	Ser
		35					40					45			
Asp	Glu	Phe	Val	Glu	Arg	Leu	Arg	Thr	Glu	Ile	Asn	Gln	Leu	Ser	His
	50					55					60				
Val	Thr	Leu	Thr	Glu	Lys	Glu	Leu	Glu	Tyr	Met	Ile	Lys	Asn	Cys	Arg
65					70					75					80
Phe	Leu	Pro	Arg	Val	Tyr	Trp	Glu	Trp	Leu	Ser	Ser	Phe	Arg	Phe	Gln
				85					90					95	
Pro	Glu	Lys	Ile	Glu	Ile	Arg	Leu	Asp	Glu	Asn	Arg	Gln	Leu	His	Ile
			100					105					110		

Glu Val Asn Asp Tyr Leu Tyr Lys Ala Thr Leu Tyr Glu Val Pro Leu
 115 120 125
 Leu Ala Ile Val Ser Glu Ile Lys Asn Gln Ser Ser Gly Asn Val Ala
 130 135 140
 Asn Leu Glu Asp Ile Leu Tyr Lys Leu Ser Glu Lys Thr Glu Leu Ser
 145 150 155 160
 Asn Lys His Gln Leu Phe Ser Glu Phe Gly Thr Arg Arg Arg Phe
 165 170 175
 Ser Phe Asp Val Gln Asn Gln Val Ile Gly His Leu Lys Gln Thr Ala
 180 185 190
 His Tyr Cys Ile Gly Thr Ser Asn Cys His Phe Ala Met Lys Tyr Gly
 195 200 205
 Met Lys Pro Met Gly Thr His Pro His Glu Trp Phe Met Phe His Gly
 210 215 220
 Ala Gln Phe Gly Tyr Lys His Ala Asn Tyr Met Ala Leu Glu Asn Trp
 225 230 235 240
 Val Asn Val Tyr Asp Gly Asp Leu Gly Ile Ala Leu Ser Asp Thr Tyr
 245 250 255
 Thr Ser Ala Ile Phe Leu Ser Asn Leu Ser Arg Lys Gln Ala Lys Leu
 260 265 270
 Phe Asp Gly Val Arg Cys Asp Ser Gly Asp Glu Phe Arg Phe Ile Asp
 275 280 285
 Gln Leu Thr Ala Arg Tyr Lys Glu Leu Gly Ile Asp Pro Thr Thr Lys
 290 295 300
 Thr Ile Val Phe Ser Asn Ala Leu Asp Phe Gly Lys Ala Leu Asp Ile
 305 310 315 320
 Gln Lys Tyr Cys Arg Gly Lys Ile Arg Cys Ser Phe Gly Ile Gly Thr
 325 330 335
 Asn Leu Thr Asn Asp Thr Gly Phe Lys Pro Ser Asn Ile Val Met Lys
 340 345 350
 Leu Ser Gln Cys Lys Met Asn Met Asn Gln Glu Trp Arg Glu Cys Val
 355 360 365
 Lys Leu Ser Asp Asp Ile Gly Lys His Ile Gly Ser Pro Glu Glu Val
 370 375 380
 Arg Ala Cys Leu Tyr Asp Leu Arg Leu Glu
 385 390

<210> 8707

<211> 228

<212> PRT

<213> B.fragilis

<400> 8707

Lys Gln Lys Lys Ile Met Glu Gly Ile Asn Thr Pro Phe Val Ile Asp
 1 5 10 15
 Glu His Thr Ala Ile Val Met Thr Asp Pro Gln Asn Asp Phe Leu Ser
 20 25 30
 Glu Asn Gly Leu Gly Trp Gly Ala Phe Gly Glu Asn Ile Gln Lys Asn
 35 40 45
 Gly Thr Val Glu Asn Leu Arg Arg Ile Phe Glu Val Ala Ala Lys
 50 55 60
 Gly Met Leu Val Phe Ile Ser Pro His Tyr Tyr Lys His Asp His
 65 70 75 80
 Gln Trp Leu Phe Glu Gly Pro Ile Glu Lys Leu Met His Asp Thr Gly
 85 90 95
 Met Phe Glu Arg Arg Gly Gln Leu Thr Gly Glu Gly Phe Glu Gly Ser
 100 105 110
 Gly Ala Asp Trp Leu Asp Leu Tyr Lys Pro Tyr Ile Asn Glu Gly Thr
 115 120 125

Asn Ile Ile Val Thr Ala Pro His Lys Leu Tyr Gly Pro Glu Asn Asn
 130 135 140
 Asp Leu Ile Leu Gln Leu Arg Lys Arg Gly Val Asn Lys Val Val Val
 145 150 155 160
 Cys Gly Met Ser Gly Asn Leu Cys Ala Glu Ser His Leu Arg Glu Leu
 165 170 175
 Gln Glu Arg Gly Phe Glu Ala Ala Val Val Phe Asp Ala Thr Ala Ser
 180 185 190
 Ala Lys Leu Pro Gly Met Asp Ala Asp Thr Ala Ala Phe Ile Asn Phe
 195 200 205
 Thr Leu Leu Ala Glu Lys Val Tyr Thr Thr Asp Glu Phe Val Asn Glu
 210 215 220
 Met Arg Gln Arg
 225

<210> 8708

<211> 182

<212> PRT

<213> B.fragilis

<400> 8708

Phe Met Arg Lys Ile Asn Glu Ile Phe Tyr Ser Leu Gln Gly Glu Gly
 1 5 10 15
 Tyr His Thr Gly Thr Pro Ala Val Phe Ile Arg Phe Ser Gly Cys Asn
 20 25 30
 Leu Lys Cys Asp Phe Cys Asp Thr Arg His Glu Glu Gly Glu Met Met
 35 40 45
 Thr Asp Glu Asp Ile Val Asn Glu Ile Gly Lys Tyr Pro Ala Val Met
 50 55 60
 Val Ile Leu Thr Gly Gly Glu Pro Ser Leu Trp Ile Asp Asp Ala Phe
 65 70 75 80
 Ile Asp Leu Leu His Arg Ala Gly Lys Tyr Val Cys Ile Glu Thr Asn
 85 90 95
 Gly Thr Lys Pro Leu Pro Ala Ala Ile Asp Trp Val Thr Cys Ser Pro
 100 105 110
 Lys Gln Gly Val Asn Leu Ala Leu Asn Arg Met Asp Glu Val Lys Val
 115 120 125
 Val Tyr Gly Gly Gln Asn Ile Asp Val Tyr Glu Gln Leu Pro Ala Glu
 130 135 140
 His Phe Phe Leu Gln Pro Cys Ser Cys Asn Asn Thr Ala Glu Thr Val
 145 150 155 160
 Asp Cys Val Met Arg His Pro Lys Trp Arg Leu Ser Leu Gln Thr His
 165 170 175
 Lys Leu Ile Asn Ile Leu
 180

<210> 8709

<211> 366

<212> PRT

<213> B.fragilis

<400> 8709

Lys Arg Leu Lys Ile Met Lys Lys Lys Phe Thr Ile Phe Val Met Leu
 1 5 10 15
 Leu Ala Gly Ile Ile Tyr Thr Gly His Ala Gln Gly Val Gln Trp Ile
 20 25 30
 Tyr Gln Gln Lys Gln Glu Lys Lys Asn Met Lys Asn Leu Ser Glu Ile
 35 40 45
 Tyr Phe Ala Gly Gly Cys Phe Trp Gly Thr Asp His Phe Leu Lys Gln

50		55		60
Ile Arg Gly Val Lys Ser Thr Gln Val Gly Tyr Ala Asn Gly Asn Ile				
65		70		80
Ala Asn Pro Thr Tyr Gln Gln Val Cys Thr Gly Lys Thr Asn Phe Ala				
	85		90	95
Glu Thr Val Lys Val Glu Tyr Asn Pro Gln Glu Val Pro Leu Lys Leu				
	100		105	110
Leu Ile Asp Leu Phe Phe Lys Thr Ile Asp Pro Thr Ser Leu Asn Arg				
	115		120	125
Gln Gly Asn Asp Lys Gly Ser Gln Tyr Arg Ile Gly Ile Tyr Tyr Thr				
	130		135	140
Asp Glu Val Asp Leu Pro Thr Ile Arg Thr Ala Ile Asp Glu Leu Ala				
	145		150	155
Lys Glu Tyr Ser Lys Pro Ile Val Ile Glu Val Lys Pro Leu Ser Asn				
	165		170	175
Phe Tyr Lys Ala Glu Glu Tyr His Gln Asp Tyr Leu Asp Lys Asn Pro				
	180		185	190
Gly Gly Tyr Cys His Ile Asn Pro Ala Leu Phe Glu Leu Ala Lys Lys				
	195		200	205
Ala Asn Ala Gln Ala Glu Gln Pro Gln Thr Asn Tyr Lys Lys Pro Asp				
	210		215	220
Asp Ala Thr Leu Arg Ser Lys Leu Thr Pro Glu Gln Tyr Ala Val Thr				
	225		230	235
Gln Lys Asn Ala Thr Glu Pro Ala Phe His Asn Glu Tyr Trp Asp Glu				
	245		250	255
Lys Arg Asp Gly Ile Tyr Val Asp Ile Thr Thr Gly Glu Pro Leu Phe				
	260		265	270
Ile Ser Thr Asp Lys Phe Asp Ser Gly Cys Gly Trp Pro Ser Phe Thr				
	275		280	285
Lys Pro Ile Glu Lys Glu Val Ile Lys Glu Lys Met Asp Thr Ser His				
	290		295	300
Gly Met Ile Arg Thr Glu Val Arg Ser Lys Thr Gly Asp Ala His Leu				
	305		310	315
Gly His Val Phe Thr Asp Gly Pro Lys Glu Lys Gly Gly Leu Arg Tyr				
	325		330	335
Cys Ile Asn Ser Ala Ser Leu Arg Phe Ile Pro Lys Glu Lys Met Lys				
	340		345	350
Glu Glu Gly Tyr Gly Glu Tyr Leu Lys Leu Leu Pro Gln Lys				
	355		360	365

<210> 8710
 <211> 248
 <212> PRT
 <213> B.fragilis

<400> 8710
 Tyr Ile Met Lys Val Gly Leu Phe Ile Pro Cys Tyr Ile Asn Ala Ile
 1 5 10 15
 Tyr Pro Gln Val Gly Val Ala Ser Tyr Lys Leu Leu Lys Asn Leu Gly
 20 25 30
 Val Asp Val Asp Tyr Pro Leu Asp Gln Thr Cys Cys Gly Gln Pro Met
 35 40 45
 Ala Asn Ala Gly Phe Gln Asp Glu Ser Leu Lys Met Ala Ile Arg Phe
 50 55 60
 Asp Asp Leu Phe Arg Lys Tyr Asp Tyr Ile Val Gly Pro Ser Ala Ser
 65 70 75 80
 Cys Val Ala Phe Val Lys Glu Asn His Pro Gly Ile Leu Ala Lys Glu
 85 90 95
 Gly His Gln Cys Gln Ser Ala Gly Lys Ile Tyr Asp Leu Cys Ala Phe

[illegible]

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<210> 8711
<211> 405
<212> PRT
<213> B.fragilis
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<400> 8711															
Asn	Thr	Met	Lys	Ser	Ile	Leu	Leu	Ser	Val	Ile	Ser	Phe	Leu	Leu	Val
1				5					10					15	
Met	Asn	Val	Cys	Gly	Lys	Asn	Asp	Val	Asp	Met	Arg	Thr	Tyr	Leu	Lys
			20					25					30		
Lys	Val	Leu	Gly	Asn	Leu	Gly	Lys	Ile	Glu	Ser	Ala	Ser	Tyr	His	Glu
		35					40					45			
Gln	Ser	Gln	Ser	Trp	Gln	Pro	Gly	Asp	Thr	Val	Ala	Ile	Thr	Asn	Phe
	50					55					60				
His	Arg	Phe	Ile	Lys	Glu	Tyr	Thr	Asn	Pro	Ser	Asp	Ser	Thr	Ile	Gly
65				70					75					80	
Ala	Ser	Tyr	Val	Cys	Leu	Asp	Ala	Lys	Asp	Thr	Thr	Arg	Phe	Glu	Phe
				85					90					95	
Gly	Tyr	Asp	Gly	Asn	Val	Arg	Met	Ile	Ser	Tyr	His	Glu	His	Lys	Gly
			100					105					110		
Ile	Met	Ile	Asp	Asp	Phe	Thr	Thr	Arg	Ser	Leu	Pro	Phe	Arg	Leu	Val
		115					120					125			
Ala	Pro	Pro	Phe	Phe	Cys	Tyr	Thr	Arg	Asn	Ile	Ile	Gly	Tyr	Ala	Leu
	130					135					140				
Ser	Thr	Gly	Asp	Ser	Ile	Thr	Thr	Glu	Trp	Lys	Asp	Leu	Gly	Glu	Ala
145				150					155					160	
Tyr	Tyr	Phe	Lys	Leu	Val	Ile	His	Glu	Asp	Arg	Gln	Val	Glu	Phe	Phe
			165						170					175	
Gly	Lys	Ala	Tyr	Tyr	Ile	Pro	Lys	Pro	Pro	Phe	Asp	Leu	Gly	Asp	Pro
		180					185						190		
Thr	Ser	Ile	Tyr	Glu	Leu	Trp	Ile	Ser	Lys	Ala	Asp	Gly	Leu	Pro	Tyr
	195					200					205				
Lys	Met	Arg	Arg	Glu	Met	Ser	His	Gln	Ile	Ser	Ala	Thr	Thr	Cys	Ser
	210				215						220				
Asp	Val	Val	Leu	Asn	Gln	Leu	Ser	Ile	Ala	Gly	Leu	Asn	Leu	Tyr	Asp
225				230					235					240	
Tyr	Val	Pro	Gln	Asp	Tyr	Glu	Ile	Arg	Lys	Tyr	Gly	Glu	Gln	Lys	Lys
			245						250				255		
Val	Thr	Gln	Pro	Ala	Ala	Thr	Asp	Leu	Ile	Gly	Gln	Lys	Ala	Pro	Asp

260 265 270
 Trp Met Leu Lys Asp Met Tyr Glu Lys Pro Val Ala Leu Ser Glu Phe
 275 280 285
 Lys Ser Lys Val Leu Leu Val Asn Leu Thr Gly Ile Gly Cys Gly Ala
 290 295 300
 Cys His Ala Ser Ile Pro Phe Leu Asn Gly Leu Lys Gly Lys Phe Asn
 305 310 315 320
 Ala Gly Glu Phe Glu Val Val Ser Ile Glu Thr Trp Gly Arg Glu Pro
 325 330 335
 His Ser Leu Arg Thr Tyr Ala Asp Lys Asn Gln Ile Asn Tyr Ser Phe
 340 345 350
 Leu Cys Gly Asp Glu Gly Ile Val Lys Ser Tyr Arg Thr Tyr Gly Ala
 355 360 365
 Ala Pro Leu Phe Phe Ile Leu Asp Gln Asp Arg Val Ile Arg Lys Val
 370 375 380
 Ile Arg Gly Tyr Arg Met Gly Arg Thr Asp Glu Glu Ile Thr Asp Ala
 385 390 395 400
 Ile Lys Ala Leu Leu
 405

<210> 8712

<211> 477

<212> PRT

<213> B.fragilis

<400> 8712

Thr Ser Met Lys Lys Leu Ile Ile Ser Leu Ala Ala Ile Leu Ala Leu
 1 5 10 15
 Ser Ser Cys Gly Ile Tyr Ser Lys Tyr Lys Pro Val Thr Lys Ile Pro
 20 25 30
 Asp Gly Leu Tyr Gly His Glu Gly Thr Asp Thr Pro Gly Leu Thr Ser
 35 40 45
 Ala Asp Pro Glu Ile Gln Arg Ser Asp Thr Ala Ala Asn Phe Gly Asn
 50 55 60
 Leu Ser Trp Arg Glu Val Phe Thr Asp Pro Tyr Leu Arg Val Leu Ile
 65 70 75 80
 Asp Ser Ala Leu Val Arg Asn Thr Asp Leu Arg Thr Ala His Leu Arg
 85 90 95
 Val Lys Glu Ala Glu Ala Thr Leu Leu Ser Ala Arg Leu Ser Tyr Leu
 100 105 110
 Pro Ala Phe Ser Leu Ser Pro Gln Gly Thr Ala Ser Ser Phe Asp Gly
 115 120 125
 Gly Lys Ala Thr Gln Thr Tyr Ser Leu Pro Val Ser Ala Ser Trp Glu
 130 135 140
 Ile Asp Ile Phe Gly Arg Leu Thr Asn Ala Lys Arg Arg Ala Gln Ala
 145 150 155 160
 Val Val Ala Gln Ser Arg Asp Tyr Glu Gln Ala Val Gln Thr Gln Leu
 165 170 175
 Ile Ala Ala Val Ala Asn Asn Tyr Phe Thr Leu Leu Met Leu Asp Ala
 180 185 190
 Gln Ile Glu Ile Ser Thr Ala Thr Glu Ala Ala Trp Lys Glu Ser Val
 195 200 205
 Ala Thr Thr Arg Ala Met Lys Ala Ala Gly Met Val Thr Glu Ala Ala
 210 215 220
 Leu Ser Gln Thr Glu Ala Thr Tyr Tyr Asn Ile Cys Thr Thr Leu Leu
 225 230 235 240
 Asp Leu Gln Glu Gln Leu Asn Gln Ala Glu Asn Ala Leu Ser Leu Leu
 245 250 255
 Leu Ala Asp Val Pro His Arg Ile Pro Arg Gly Arg Leu Ala Asp Gln

					260						265						270	
Gln	Leu	Pro	Glu	Asn	Leu	Ser	Val	Gly	Val	Pro	Leu	Gln	Ile	Leu	Ser			
					275						280						285	
Asn	Arg	Pro	Asp	Val	Arg	Ser	Ala	Glu	Gln	Ser	Leu	Ala	Gln	Ala	Phe			
					290						295						300	
Tyr	Thr	Thr	Asn	Ala	Ala	Arg	Ser	Ala	Phe	Tyr	Pro	Ser	Ile	Thr	Leu			
305						310						315						320
Ser	Gly	Ser	Ala	Gly	Trp	Thr	Asn	Ser	Ala	Gly	Ala	Met	Ile	Val	Asn			
					325						330						335	
Pro	Gly	Lys	Phe	Leu	Ala	Thr	Ala	Val	Ala	Ser	Leu	Thr	Gln	Pro	Leu			
					340						345						350	
Phe	Asn	Arg	Gly	Ala	Asn	Ile	Ala	Gln	Leu	Arg	Ile	Ala	Lys	Ala	Gln			
					355						360						365	
Gln	Glu	Glu	Ala	Arg	Leu	Ser	Phe	Glu	Gln	Thr	Leu	Leu	Asn	Ala	Gly			
					370						375						380	
Ser	Glu	Val	Asn	Asn	Ala	Leu	Val	Gln	Tyr	Gln	Thr	Ala	Arg	Asp	Lys			
385						390						395						400
Ser	Ala	Tyr	Phe	Asn	Arg	Gln	Val	Ala	Ser	Leu	Glu	Asn	Ala	Ala	Arg			
					405						410						415	
Ser	Thr	Gln	Leu	Leu	Met	Lys	His	Gly	Asn	Thr	Thr	Tyr	Leu	Glu	Val			
					420						425						430	
Leu	Thr	Ala	Gln	Gln	Thr	Leu	Leu	Asn	Ala	Gln	Leu	Ser	Gln	Val	Ala			
					435						440						445	
Asn	Arg	Phe	Thr	Glu	Ile	Gln	Gly	Val	Ile	Thr	Leu	Tyr	Gln	Ala	Leu			
					450						455						460	
Gly	Gly	Gly	Arg	Glu	Thr	Ala	Ser	Gly	Glu	Arg	Asn	Ser						
465						470						475						

<210> 8713

<211> 320

<212> PRT

<213> B.fragilis

<400> 8713

Asn	Lys	Met	Lys	Asp	Leu	Leu	Asp	Lys	Ile	Phe	Pro	Thr	Leu	Ser	Asp
1				5				10				15			
Glu	Leu	Ile	Ile	Val	Ile	Ser	Leu	Ile	Ile	Gly	Leu	Leu	Val	Thr	Ala
			20				25				30				
Ser	Leu	Ile	Leu	Phe	Leu	Val	Lys	Lys	Ile	Phe	Pro	Lys	Thr	Asn	Ile
			35				40				45				
Ser	Glu	Leu	Ala	Ala	Arg	Thr	Arg	Ser	Trp	Trp	Ile	Met	Ala	Gly	Met
			50				55				60				
Phe	Ile	Gly	Ala	Val	Phe	Ile	Ser	Tyr	Asn	Ile	Ser	Tyr	Phe	Phe	Leu
65				70				75				80			
Ala	Phe	Leu	Ser	Phe	Ile	Ala	Phe	Arg	Glu	Leu	Tyr	Ser	Val	Leu	Gly
			85				90				95				
Phe	Arg	Glu	Ala	Asp	Arg	Gly	Ala	Leu	Phe	Trp	Gly	Ile	Leu	Ala	Ile
			100				105				110				
Pro	Ile	Gln	Tyr	Tyr	Leu	Ala	Tyr	Leu	Ala	Trp	Tyr	Gly	Ala	Phe	Ile
			115				120				125				
Ile	Phe	Ile	Pro	Val	Val	Met	Phe	Leu	Val	Leu	Pro	Leu	Arg	Leu	Val
			130				135				140				
Leu	Lys	Gly	Asp	Thr	His	Gly	Ile	Thr	Lys	Ser	Met	Ala	Leu	Leu	Gln
145				150				155				160			
Trp	Ile	Leu	Met	Leu	Ser	Val	Phe	Gly	Ile	Ser	His	Leu	Ala	Tyr	Leu
			165				170				175				
Leu	Ser	Leu	Pro	Glu	Leu	Pro	Gly	Phe	Ser	Ser	Gly	Gly	Arg	Gly	Leu
			180				185				190				
Leu	Leu	Phe	Leu	Val	Phe	Leu	Thr	Glu	Ile	Asn	Asp	Val	Met	Gln	Phe

195	200	205
Ile Trp Gly Lys Leu Leu Gly	Arg His Lys Ile Leu Pro Lys Ile Ser	
210	215	220
Pro Asn Lys Thr Trp Glu Gly	Phe Leu Gly Gly Val Ile Ser Thr Thr	
225	230	235
Val Ile Gly Tyr Phe Leu Gly	Phe Leu Thr Pro Leu Ser Ala Pro Asn	
	245	250
Val Ile Leu Val Ser Ala Leu	Ile Ala Gly Phe Ser Gly Asp	
	260	265
Val Val Ile Ser Ala Ile Lys	Arg Asp Lys Gly Ile Lys Asp Met Gly	
	275	280
Asn Ser Ile Pro Gly His Gly	Gly Val Phe Asp Arg Ile Asp Ser Leu	
	290	295
Ala Tyr Thr Ala Pro Val Phe	Phe His Leu Val Tyr Tyr Ile Ala Tyr	
305	310	315
		320

<210> 8714

<211> 443

<212> PRT

<213> B.fragilis

<400> 8714

Lys Leu Met Lys Thr Asp Leu Ile Tyr Gly Ile Glu Asp Arg Pro Pro	
1 5 10 15	
Phe Lys Asp Ala Leu Phe Ala Ala Leu Gln His Leu Leu Ala Ile Phe	
20 25 30	
Val Ala Ile Ile Thr Pro Pro Leu Ile Ile Ala Ser Ala Leu Lys Leu	
35 40 45	
Asp Val Glu Lys Thr Gly Phe Leu Val Ser Met Ser Leu Phe Ala Ser	
50 55 60	
Gly Val Ser Thr Phe Ile Gln Cys Arg Arg Phe Gly Pro Ile Gly Ala	
65 70 75 80	
Lys Leu Leu Cys Ile Gln Gly Thr Ser Phe Ser Phe Ile Gly Pro Ile	
85 90 95	
Ile Ala Thr Gly Leu Val Gly Gly Leu Pro Leu Ile Phe Gly Val Cys	
100 105 110	
Met Ala Ala Ala Pro Ile Glu Met Ile Ile Ser Arg Thr Phe Lys Tyr	
115 120 125	
Met Arg Asn Ile Ile Thr Pro Leu Val Ser Gly Ile Val Val Leu Leu	
130 135 140	
Ile Gly Leu Ser Leu Ile Lys Val Gly Ile Ile Ser Cys Gly Gly Gly	
145 150 155 160	
Tyr Thr Ala Met Asp Asn Gly Thr Phe Ala Ser Trp Glu Asn Leu Ser	
165 170 175	
Ile Ala Gly Ala Val Leu Leu Ser Val Leu Phe Phe Asn Arg Cys Lys	
180 185 190	
Asn Lys Tyr Leu Arg Met Ser Ser Ile Val Leu Gly Leu Cys Leu Gly	
195 200 205	
Tyr Gly Leu Ala Phe Val Leu Gly Lys Val Asp Met Ser Ala Leu Asn	
210 215 220	
Val Glu Met Leu Met Ser Phe Asn Ile Pro Gln Pro Phe Lys Tyr Gly	
225 230 235 240	
Leu Asp Phe Asn Val Ser Ser Phe Ile Ala Ile Gly Leu Val Tyr Met	
245 250 255	
Ile Thr Ala Ile Glu Ala Thr Gly Asp Val Thr Ala Asn Ser Met Ile	
260 265 270	
Ser Gly Leu Lys Ile Glu Gly Asp Asp Tyr Leu Lys Arg Val Ser Gly	
275 280 285	
Gly Val Met Ala Asp Gly Phe Asn Ser Phe Leu Ala Gly Ile Phe Asn	

290 295 300
 Ser Phe Pro Asn Ser Ile Phe Ala Gln Asn Asn Gly Ile Ile Gln Leu
 305 310 315 320
 Thr Gly Val Ala Ser Arg Tyr Val Gly Tyr Tyr Ile Ala Ala Met Leu
 325 330 335
 Ile Leu Leu Gly Leu Phe Pro Ile Val Gly Ala Val Phe Ser Leu Met
 340 345 350
 Pro Asp Pro Val Leu Gly Gly Ala Thr Leu Leu Met Phe Gly Thr Val
 355 360 365
 Ala Ala Ala Gly Ile Arg Ile Val Ala Ser Gln Asn Ile Gly Arg Lys
 370 375 380
 Glu Thr Leu Val Leu Ala Val Ser Leu Ser Leu Gly Leu Gly Val Glu
 385 390 395 400
 Leu Met Pro Asp Val Leu Ser Gln Ala Pro Glu Ala Ile Arg Ser Ile
 405 410 415
 Phe Ser Ser Gly Ile Thr Thr Gly Gly Leu Thr Ala Ile Ile Ala Asn
 420 425 430
 Ile Val Ile Arg Val Lys Glu Glu Asn Glu Glu
 435 440

<210> 8715

<211> 252

<212> PRT

<213> B.fragilis

<400> 8715

Asn Met Lys Asn Tyr Leu Phe Glu Val Cys Thr Asn Ser Val Glu Ser
 1 5 10 15
 Cys Ile Ala Ala Gln Glu Gly Gly Ala Asn Arg Val Glu Leu Cys Ala
 20 25 30
 Gly Ile Pro Glu Gly Gly Thr Thr Pro Ser Tyr Gly Glu Ile Ala Met
 35 40 45
 Ala Arg Glu Val Leu Thr Thr Thr Arg Leu His Val Ile Ile Arg Pro
 50 55 60
 Arg Gly Gly Asp Phe Leu Cys Ser Pro Val Glu Val Lys Thr Met Leu
 65 70 75 80
 Lys Asp Ile Glu Met Ala Arg Gln Leu Gly Ala Asp Gly Val Val Phe
 85 90 95
 Gly Cys Leu Thr Asn Gly Gly Ile Asp Val Pro Val Met Lys Gln
 100 105 110
 Leu Met Glu Ala Ser Lys Gly Leu Ser Val Thr Phe His Arg Ala Phe
 115 120 125
 Asp Val Cys Arg Asp Ala Ser Glu Ala Leu Glu Gln Ile Ile Asp Leu
 130 135 140
 Gly Cys Asp Arg Ile Leu Thr Ser Gly Gln Gln Ala Thr Ala Glu Leu
 145 150 155 160
 Gly Ile Pro Leu Leu Lys Glu Leu Arg Glu Arg Ala Asn Gly Arg Ile
 165 170 175
 Thr Leu Leu Ala Gly Cys Gly Val Asn Glu Lys Asn Ile Cys Arg Ile
 180 185 190
 Ala Lys Glu Thr Gly Ile Gln Glu Phe His Phe Ser Ala Arg Glu Ser
 195 200 205
 Ile Lys Ser Gly Met Glu Tyr Lys Asn Glu Ala Val Ser Met Gly Gly
 210 215 220
 Thr Val His Ile Ser Glu Tyr Glu Arg Asn Val Thr Thr Val Lys Arg
 225 230 235 240
 Val Lys Asp Thr Ile Glu Ser Ile Thr Ser Ser Leu
 245 250

<210> 8716
 <211> 291
 <212> PRT
 <213> B.fragilis

<400> 8716
 Thr Arg Arg Asn Ala Cys Ile Arg His Ala Met Thr Ser Thr Ser Phe
 1 5 10 15
 Cys Arg Lys Ser Ser Ala Arg Gln Ala Gly Gly Lys Cys Glu Glu Pro
 20 25 30
 Ala Asn Gly Thr Phe Asn Arg Pro Asp Leu Arg Thr Asp Asn Lys Thr
 35 40 45
 Ile Met Lys Gln Glu Asn Asp Ile Pro Asp Lys Ile Leu Glu Arg Ile
 50 55 60
 Arg Lys Leu Ile Arg Leu Lys Glu Ser Thr Thr Ser Glu Gly Glu Ala
 65 70 75 80
 Lys Ala Ala Ala Thr His Val Asn Arg Leu Leu Lys Glu Tyr Asn Leu
 85 90 95
 Ser Leu Leu Asp Val Asn Glu Lys Arg Pro Glu Thr Val Phe Glu Ile
 100 105 110
 Arg Glu Ser Gly Ala Ile Ser Tyr Lys Asp Ser Phe Gly Asn Tyr Trp
 115 120 125
 Lys Arg Asp Leu Leu Arg Val Leu Cys Glu Tyr Asn Tyr Cys Arg Met
 130 135 140
 Leu Arg Tyr Arg Gly Thr Thr Asp Met Leu Ile Val Gly Thr Gln Glu
 145 150 155 160
 Asn Ile Ala Ala Val Thr Val Leu Tyr Asp Tyr Leu Arg Thr Thr Phe
 165 170 175
 Arg Arg Leu Ala Asp Lys Arg His Met Glu Tyr Val Ser Ile Lys Arg
 180 185 190
 Gly Tyr Tyr Arg Thr Glu Lys Tyr Arg Lys Lys Tyr Ile Arg Ser Tyr
 195 200 205
 Leu Glu Gly Val Thr Pro Gly Leu Arg Asp Gln Phe Glu Ala Met Arg
 210 215 220
 Ser Thr Ser Ala Glu Glu Val Arg Glu Thr Ala Leu Val His Cys His
 225 230 235 240
 Asn Ala Leu Ile Glu Arg Tyr Leu Glu Thr Ile Gly Thr Cys Ser Ala
 245 250 255
 Lys Val Gln Pro Arg Lys Thr Lys Thr Asp Tyr Ser Ala Tyr His Ser
 260 265 270
 Gly Met Asp Asp Gly Arg Ser Ile Ser Leu His Arg Gln Ile Asn Gly
 275 280 285
 Gly Asn Val
 290

<210> 8717
 <211> 200
 <212> PRT
 <213> B.fragilis

<400> 8717
 Ser Ala Gly Lys Gly Gly Lys Gln Met Ser Ser Lys Glu Asp Ile Leu
 1 5 10 15
 Ala Ser Ile Arg Lys Asn Thr Lys Asn Arg Tyr Glu Tyr Pro Asp Trp
 20 25 30
 Gln Ile Asn Ala Thr Val Tyr Pro Asp Val Val Ala Lys Phe Cys Glu
 35 40 45
 Met Ser Phe Ala Val Gly Gly Glu Ala Ile Val Leu Gly Glu Gly Glu
 50 55 60

Asp Ile Asn Ala Val Ile Arg Arg Thr Tyr Pro Asp Ala Gly Ser Ile
 65 70 75 80
 Ala Ser Asp Leu Glu Glu Ile Thr Cys Ala Thr Phe Asn Pro Asp Leu
 85 90 95
 Leu Gly Arg Ala Gln Asp Leu Asn Gly Thr Asp Ile Ala Val Val Lys
 100 105 110
 Gly Glu Ile Gly Val Ala Glu Asn Ala Ala Val Trp Ile Pro Gln Thr
 115 120 125
 Val Lys Tyr Lys Ala Leu Tyr Phe Ile Ala Glu Lys Leu Val Ile Val
 130 135 140
 Leu Asp Lys Asn Arg Ile Val Ser Asn Met His Gln Ala Tyr Glu Arg
 145 150 155 160
 Ile Lys Asp Glu Lys Tyr Lys Phe Gly Thr Phe Ile Ser Gly Pro Ser
 165 170 175
 Lys Thr Ala Asp Ile Glu Gln Ala Leu Val Met Gly Ala His Gly Ala
 180 185 190
 Arg Asp Val Leu Val Ile Leu Lys
 195 200

<210> 8718

<211> 165

<212> PRT

<213> B.fragilis

<400> 8718

Met Ala Ile Glu Asn Thr Glu Gly Tyr Pro Leu Ile Ser Trp Arg Glu
 1 5 10 15
 Ile Ile Ile Lys Thr Lys Tyr Met Asn Thr Gln Arg Gln Thr Gly Thr
 20 25 30
 Cys Arg Ser Leu Ser Gly His Ala Gln Arg His Gly Arg Glu Val Arg
 35 40 45
 Pro Ser Tyr Glu Ile Ser Thr Ser Gln Phe Ser Asp Met Lys Val Arg
 50 55 60
 Arg Leu Thr Arg Asn Tyr Gly Phe Gly Gly Tyr Ser Ile Tyr Arg Tyr
 65 70 75 80
 Leu Val Ser Glu Ala Leu Tyr Lys Gly Glu Tyr Phe Leu Pro Trp Cys
 85 90 95
 Glu Glu Thr Ala Arg Ala Val Ala Ser Tyr Trp Asn Ala Ser Leu Glu
 100 105 110
 Asp Ile Thr Arg Ile Val Asp Gly Cys Val Gln Val Gly Leu Phe Asn
 115 120 125
 Asp Glu Leu Tyr Arg Lys His Arg Val Leu Thr Ser Ala Ala Ile Gln
 130 135 140
 Gln Asp Tyr Leu Lys Leu Cys Gly Met Ala Tyr Ile Gln Glu Glu Phe
 145 150 155 160
 Ala Leu Ser Ala Ser
 165

<210> 8719

<211> 505

<212> PRT

<213> B.fragilis

<400> 8719

Lys Gln Ser Asp Met Ile Asn Lys Lys His Ile Ser Leu Leu Thr Leu
 1 5 10 15
 Val Ile Phe Leu Ser Leu Ser His Phe Ala Val Ser Ala Ser Ala Gln
 20 25 30
 Pro Ser Val Val Glu Val Pro Ser Val Ser Val Gln Pro Ser Val Asp

35 40 45
 Ser Leu Ser His Tyr Leu Glu Gln Ala Ala Arg Ser Asn Pro Gln Val
 50 55 60
 Asn Ala Asp Phe Met Leu Tyr Lys Ala Ser Leu Glu Lys Ile Pro Gln
 65 70 75 80
 Ala Gly Ala Phe Ala Asp Pro Glu Leu Glu Ile Gly Phe Phe Val Lys
 85 90 95
 Pro Met Glu Thr Leu Met Gly Lys Gln Ile Ala Asp Phe Thr Leu Met
 100 105 110
 Gln Met Phe Pro Trp Phe Gly Thr Arg Lys Ala Ala Arg Ser Glu Ala
 115 120 125
 Ser Glu Met Ala Arg Met Ala Tyr Glu Gln Phe Arg Asp Thr Arg Asn
 130 135 140
 Asn Leu Trp Tyr Glu Val Lys Ala Gln Trp Tyr Gln Leu Ser Ser Leu
 145 150 155 160
 Asn Glu Gln Tyr His Ile Thr Glu Ala Asn Ile Arg Leu Leu Tyr Gln
 165 170 175
 Leu Glu Gln Leu Ala Leu Asn Arg Phe Ser Ala Ser Ser Ala Gln Ala
 180 185 190
 Ala Pro Ser Ser Thr Ser Val Thr Ser Val Ala Ser Met Pro Pro Ala
 195 200 205
 Leu Ser Ser Gly Ser Gly Met Ser Gly Met Gly Gly Met Gly Ser Pro
 210 215 220
 Ala Pro Ala Gly Thr Pro Gly Val Ser Ala Gly Ser Ser Ser Gly Arg
 225 230 235 240
 Asp Met Ser Gly Met Gly Gly Gly Ser Met Gly Asn Val Val Val Gly
 245 250 255
 Gly Met Ser Asp Val Leu Arg Ile Gln Met Glu Arg Ala Gly Leu Glu
 260 265 270
 Asp Asn Leu Ala Ser Leu Leu Ser Ala Arg Leu Thr Val Gln Ala Arg
 275 280 285
 Phe Asn Ala Leu Leu Asn Arg Pro Ser Asp Ala Ser Val Cys Val Pro
 290 295 300
 Asp Ser Leu Thr Gln Arg Phe Tyr Arg Ile Asp Gly Gln Leu Leu Leu
 305 310 315 320
 Asp Ser Ile Phe Thr Arg Asn Pro Met Leu Ala Met Leu Glu Ala Glu
 325 330 335
 Gly Glu Ala Tyr Arg Ala Lys Ala Lys Met Asp Arg Arg Met Ser Tyr
 340 345 350
 Pro Met Ile Gly Ile Gly Leu Gln Tyr Ser Val Val Asn Lys Val Ala
 355 360 365
 Asp Pro Met Gly Met Pro Asp Met Asn Gly Lys Asp Met Val Met Pro
 370 375 380
 Met Val Lys Val Ser Leu Pro Leu Phe Arg Arg Lys Tyr Asn Ala Arg
 385 390 395 400
 Gln Arg Glu Ser His Asn Tyr Arg Met Ala Ser Glu Leu Lys Arg Asp
 405 410 415
 Asn Val Gln Asn Gln Leu Gln Ala Glu Tyr Ile Asn Val Arg Gln Gln
 420 425 430
 Leu Asp Asp Ala Ala Arg Lys Val Ser Leu Tyr Glu Arg Gln Tyr Ala
 435 440 445
 Leu Ser Leu Ser Thr Trp Gln Leu Met Val Arg Glu Phe Thr Ala Gly
 450 455 460
 Arg Gln Ser Leu Thr Asp Val Ile Gln Val Glu Arg Gln Met Leu Asp
 465 470 475 480
 Tyr Lys Leu Lys Lys Ser Glu Ala Val Ala Ala Tyr Asn Thr Thr Val
 485 490 495
 Ala Ala Ile Glu Lys Leu Ile Ala Asp
 500 505

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

<210> 8720
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 8720
 Arg Pro Ser Glu Arg Pro Phe Pro Tyr Arg Lys Asp Arg Glu Trp Pro
 1 5 10 15
 Pro Pro Ser Leu Tyr Leu Gln Thr Tyr Thr Tyr Ile Asn Gln Asn
 20 25 30
 Gln Tyr Ser Ser Lys Gln Pro Ala Val Ala Ser Pro Leu Thr Leu Leu
 35 40 45
 Arg Tyr Phe Asn Ile Thr Asn Thr Ser Leu Ala Pro
 50 55 60

<210> 8721
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 8721
 Arg Ile Thr Glu Ser Glu Ser Asp Ser Leu Arg Phe Val Tyr Arg Ile
 1 5 10 15
 His Ile Lys Thr Ile Arg Tyr Asp Lys Gln Glu Thr Tyr Ile Phe Thr
 20 25 30
 His Leu Gly Asp Ile Pro Phe Ala Glu Ser Phe Cys Arg Phe Gly Phe
 35 40 45
 Gly Ala Ala Ile Arg Cys Gly Gly Ala Phe Cys Phe Gly Ala Thr Leu
 50 55 60
 Cys Arg Gln Leu Val Pro Leu Ser Gly Thr Gly Gly Thr Gln
 65 70 75

<210> 8722
 <211> 128
 <212> PRT
 <213> B.fragilis

<400> 8722
 Asn Ser Lys Asp Thr Met Asn Lys Ser Phe Phe Tyr Ala Ile Cys Phe
 1 5 10 15
 Val Val Ile Leu Val Val Glu Ile Ile Gly Ile Tyr Val Arg Asp
 20 25 30
 Ser Phe Val Arg Pro Tyr Met Gly Asp Ala Leu Val Val Val Leu Ile
 35 40 45
 Tyr Cys Phe Ile Arg Ile Phe Ile Pro Asn Gly Leu Ser Gln Leu Pro
 50 55 60
 Leu Tyr Val Leu Ala Phe Ala Cys Phe Ile Glu Ile Leu Gln Tyr Phe
 65 70 75 80
 Gln Leu Val Asp Val Leu Gly Ile Ser Asn Arg Ile Leu Arg Ile Ala
 85 90 95
 Leu Gly Ser Thr Phe Asp Leu Lys Asp Met Val Ser Tyr Ala Gly Gly
 100 105 110
 Tyr Val Phe Ile Leu Leu Ala Glu Tyr Phe Leu Asp Lys Lys Arg Lys
 115 120 125

<210> 8723
 <211> 80
 <212> PRT

<213> B.fragilis

<400> 8723

Asn Asn Arg Glu Arg Asn Lys Tyr Ile Ser Ile Tyr Arg Ile Leu Pro
 1 5 10 15
 Leu Asn Ser Ser Asn Lys Leu Ile Gly Phe Tyr Ile Gln Asn Lys Ile
 20 25 30
 Ala Asn Val Pro Phe Phe Thr Glu Ala Pro Ile Gln Tyr Pro Arg Val
 35 40 45
 Ala Gly Cys Asn Cys Ala Ile Val Asn Cys Leu Cys Ala Cys Pro His
 50 55 60
 Asn Ser Lys Arg Val Phe Arg Asn Ile Leu Tyr Tyr Ile Ile Ala Ile
 65 70 75 80

<210> 8724

<211> 373

<212> PRT

<213> B.fragilis

<400> 8724

Gln Ile Arg Asp Gly Tyr Asp Arg Thr Ile Val Glu Phe Leu Arg Leu
 1 5 10 15
 Asn Phe His Pro Val Ala Ile Arg Glu Gly Tyr Leu Leu Ile Asn Asp
 20 25 30
 Tyr Leu Cys Gly Ser Leu Leu Asp Phe Met Met Asp Lys Thr Lys Lys
 35 40 45
 Val Arg Tyr Val Phe Ser Val Phe Met Val Met Leu Met Val Gly Ile
 50 55 60
 Ala Glu Trp Thr Gly Glu Lys Glu Ile Ile Phe Pro Glu Met Ala Ala
 65 70 75 80
 Leu Ala Val Gly Leu Trp Val Ile Asp Lys Arg Val Trp Lys Val Gly
 85 90 95
 Arg Trp Gln Leu Ile Gly Leu Met Thr Ala Gly Ala Val Ala Gly Val
 100 105 110
 Cys Ile Val Arg Tyr Ser Thr Leu Pro Leu Leu Cys Asn Leu Cys Leu
 115 120 125
 Ala Phe Ala Phe Ala Ala Cys Cys Leu Leu Phe Ser Arg Ala Thr Leu
 130 135 140
 Ile Pro Leu Ile Ser Ala Cys Met Leu Pro Val Leu Leu His Thr Glu
 145 150 155 160
 Thr Trp Ile Tyr Pro Ser Ala Val Phe Leu Leu Ser Ala Val Leu Val
 165 170 175
 Ala Gly Gln Arg Leu Met Glu Lys Gly Gly Leu Arg Arg Glu Thr Asp
 180 185 190
 Tyr Val Leu Pro Gly Arg Glu Trp Lys Lys Glu Ile Phe Arg Trp Ala
 195 200 205
 Ala Leu Leu Phe Trp Val Ser Leu Val Ala Ala Leu Ser Ile Ser Cys
 210 215 220
 Gly Cys Ser Tyr Phe Ile Ile Pro Pro Leu Ile Val Thr Phe Thr Glu
 225 230 235 240
 Ile Val Asn Ser Lys Ala Gly Phe Arg Asn Arg Pro Met Gln Val Phe
 245 250 255
 Leu Phe Leu Val Thr Gly Ala Ala Leu Gly Thr Ala Phe Gln Ile Ile
 260 265 270
 Gly His Thr Phe Leu His Leu Pro Glu Thr Val Val Ala Leu Leu Ile
 275 280 285
 Ile Cys Cys Leu Phe Ala Val Phe Glu Trp Thr Gly Lys Tyr Phe Ala
 290 295 300
 Pro Ala Gly Ala Leu Ala Leu Ile Pro Leu Ile Val Pro Gln Glu Gly

305 310 315 320
 Val His Trp Leu Pro Leu Gln Ala Ala Ala Gly Ala Ala Leu Phe Ile
 325 330 335
 Ala Ile Gly Met Leu Val Phe Gln Gln Cys Tyr Lys Trp Ser Lys Ala
 340 345 350
 Gln Leu Ile Phe Cys Phe Thr Pro Thr Leu Leu Arg Arg Tyr Leu Asn
 355 360 365
 Arg Arg Arg Lys Glu
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<210> 8725
 <211> 138
 <212> PRT
 <213> B.fragilis

<400> 8725
 Glu Ser Gly Glu Val Lys Glu Val Pro Arg Ile Thr Ile Phe Thr Ile
 1 5 10 15
 Asn Asp Tyr Phe Pro Pro Lys Ser Phe Cys Asn Ile Arg Val Asn Arg
 20 25 30
 Ile Phe Val Tyr Asn Phe Gly Val Val Met Thr Glu Glu Glu Lys Lys
 35 40 45
 Leu Leu Ser Thr Phe Glu Ala Arg Leu Arg His Leu Ile Tyr Leu His
 50 55 60
 Asp Glu Leu Lys Arg Glu Asn Ala Glu Leu Lys Gln Leu Leu Glu Glu
 65 70 75 80
 Glu Lys Ser Glu Leu Glu Lys Ala Arg Ala Glu Tyr Lys Ala Leu Glu
 85 90 95
 Ser Ser Tyr Thr Asp Leu Lys Thr Ala Thr Thr Ile Ser Leu Asn Gly
 100 105 110
 Ser Asp Val Lys Glu Thr Lys Leu Arg Leu Ser Lys Leu Val Arg Glu
 115 120 125
 Val Asp Lys Cys Ile Ala Leu Leu Asn Glu
 130 135

<210> 8726
 <211> 390
 <212> PRT
 <213> B.fragilis

<400> 8726
 Gly Met Lys Leu Ser Asp Tyr Ile Arg Gly Phe Arg Lys Gly Lys Glu
 1 5 10 15
 Ala His Arg Leu Glu Lys Glu Ala Met Arg Asp Pro Phe Leu Ala Asp
 20 25 30
 Ala Leu Glu Gly Tyr Ser Arg Val Glu Ser Gly Ala Asp Glu Gln Ile
 35 40 45
 Glu Leu Leu Arg Arg Arg Val Asn Met Arg Val Thr Gln Lys Arg Arg
 50 55 60
 His Thr Ile Ala Trp Ser Val Ala Ala Ser Leu Leu Ile Gly Val Cys
 65 70 75 80
 Ile Gly Ser Tyr Phe Leu Leu Gln Glu Asn Thr Leu Pro Asp Glu Ala
 85 90 95
 Arg Ile Ala Met Glu Glu Val Ser His Leu Glu Pro Leu Ser Val Gln
 100 105 110
 Lys Glu Glu Lys Lys Glu Asp Leu Val Ala Thr Val Arg Lys Asp Ser
 115 120 125
 Ala Thr Ile Gln Lys Gly Leu Ile Thr Gly Asn Arg Glu Lys Lys Val
 130 135 140

Val Val Ser Pro His Thr Glu Val Pro Gln Ala Met Thr Gln Glu Trp
 145 150 155 160
 Ile Asp Glu Ala Leu Glu Thr Thr Ile Ala Glu Glu Pro Leu Ala Ala
 165 170 175
 Thr Thr Ser Ser Ala Met Lys Ser Ile Pro Ala Asn Asp Ser Ser Leu
 180 185 190
 Thr Ala Gln Val Ala Val Gly Gly Lys Val His Gly Arg Val Thr Asp
 195 200 205
 Ser Ser Gly Tyr Pro Ile Val Gly Ala Thr Val Lys Leu Lys Gly Thr
 210 215 220
 Asn Gln Gly Thr Ile Ser Asp Val Asn Gly Asn Phe Val Leu Lys Thr
 225 230 235 240
 Gly Gly Asn Arg Glu Leu Ala Val Asp Tyr Ile Gly Tyr Glu Ser Val
 245 250 255
 Thr Leu Pro Ala Asp Thr Thr Lys Ser Leu Leu Ile Ala Met Asn Glu
 260 265 270
 Asp Gln Ala Thr Leu Asp Glu Val Val Val Val Gly Tyr Gly Ser Gln
 275 280 285
 Ser Lys Gly Ser Ile Thr Gly Ala Val Ala Ser Leu Lys Met Ser Gly
 290 295 300
 Thr Pro Gln Pro Thr Ile Gly Arg Lys Ala Phe Arg Lys Tyr Leu Lys
 305 310 315 320
 Glu Ser Leu Val His Pro Ser Asp Lys Asp Cys Ala Arg Ala Lys Gly
 325 330 335
 Lys Val Ile Leu Thr Phe Arg Val Asp Lys Glu Gly Arg Pro Gln Asp
 340 345 350
 Ile Thr Val Lys Lys Gly Leu Cys Ala Ser Ala Asp Glu Glu Ala Ile
 355 360 365
 Arg Leu Ile Glu Glu Gly Pro Asp Trp Thr Met Gly Glu Glu Pro Val
 370 375 380
 Glu Ile Ser Ile Arg Phe
 385 390

<210> 8727

<211> 311

<212> PRT

<213> B.fragilis

<400> 8727

Thr Phe Pro Cys Phe Ala Ala Glu Ile Lys Phe Ser Met Ala Lys Gln
 1 5 10 15
 Gln Phe Asn Lys Leu Ile Trp Leu Val Asp Thr Ile Phe Arg Asn Ala
 20 25 30
 Pro Val Thr Phe Ala Glu Ile Asn Arg Arg Trp Arg Ala Gly Asp Asp
 35 40 45
 Asn Arg Ser Asp Ile Pro Leu Arg Thr Phe His Asn His Arg Gln Ala
 50 55 60
 Ile Glu Glu Met Phe Asp Ile Asn Ile Glu Cys Asp Lys Arg Asn Asn
 65 70 75 80
 Thr Tyr Tyr Ile Ala Asp Ala Glu Gly Met Leu Gly Asp Lys Leu Lys
 85 90 95
 Met Trp Leu Leu Asn Ser Phe Ser Leu Asn Asn Val Leu Gln Glu Asn
 100 105 110
 Val Asp Met Lys Asn Arg Ile Val Phe Glu Glu Val Pro Ser Gly Val
 115 120 125
 Gln Phe Met Asp Leu Val Ile Asp Ala Met Arg Ser Gly Arg Val Leu
 130 135 140
 Ala Met Glu Tyr Gln Ala Tyr Asn Trp Glu His Ser Lys Asp Val Leu
 145 150 155 160

Leu Glu Pro Tyr Phe Val Lys Leu Phe Arg His Arg Trp Tyr Leu Ile
 165 170 175
 Gly Ile Asn Arg Glu Tyr Lys Ala Phe Arg Ser Tyr Ser Leu Asp Arg
 180 185 190
 Ile Lys Arg Ile Ala Leu Ser Glu Glu Thr Phe Asn Phe Pro Arg Lys
 195 200 205
 Phe Thr Pro Gln Asp His Phe Arg Asp Ser Phe Gly Ile Ile Arg Asp
 210 215 220
 Glu Asn Leu Leu Pro Gln His Thr Val Leu Arg Thr Thr Ile Ser Gln
 225 230 235 240
 Ala Pro Tyr Leu Arg Asn Leu Pro Leu His Ser Ser Gln Lys Glu Ile
 245 250 255
 Ala Val Thr Glu Ser Tyr Val Asp Phe Glu Leu Tyr Ile Ser His Thr
 260 265 270
 Tyr Asp Phe Ile Gln Glu Leu Leu Ser Lys Gly Ala Ala Val Glu Val
 275 280 285
 Leu Lys Pro Gln Ser Leu Arg Asp Lys Ile Lys Ala Glu Ile Gln Asn
 290 295 300
 Met Gln Thr Leu Tyr Arg Leu
 305 310

<210> 8728

<211> 552

<212> PRT

<213> B.fragilis

<400> 8728

Asn Ser Asn Cys Met Lys Lys Ile Ser Asp Ile Leu Arg Lys Lys Gln
 1 5 10 15
 Val Leu Tyr Pro Leu Ile Ala Leu Ala Gly Phe Val Leu Gly Trp Leu
 20 25 30
 Leu Phe Ser Pro Ser Ser Ser Pro Glu Ser Ala Gly Gly Thr His Ala
 35 40 45
 Glu Ala His Asn His Asp Met His Gly Thr Ser His Asp Leu Val Gln
 50 55 60
 Asp Glu Ser Gly Val Trp Thr Cys Ser Met His Pro Gln Ile Arg Gln
 65 70 75 80
 Asp Lys Pro Gly Lys Cys Pro Ile Cys Gly Met Asp Leu Ile Pro Leu
 85 90 95
 Lys Lys Asn Val Ile Ser Gly Gly Asp Ala Val Ser Asp Pro Asp Ala
 100 105 110
 Ile Arg Leu Ser Asp Glu Ala Met Ala Leu Ala Asp Val Gln Thr Thr
 115 120 125
 Arg Val Ser Arg Ser Asn Pro Val Lys Gln Val Arg Leu Tyr Gly Lys
 130 135 140
 Ile Ile Pro Asp Glu Arg Ser Leu Gln Ser Gln Thr Ala Tyr Val Gly
 145 150 155 160
 Gly Arg Ile Glu Arg Leu Asp Ile Glu Phe Thr Gly Glu Thr Val Arg
 165 170 175
 Ala Gly Gln Thr Leu Ala Thr Leu Tyr Ser Pro Glu Leu Phe Thr Ala
 180 185 190
 Gln Gln Glu Leu Leu Glu Ala Val Arg Met Gln Gln Pro Ala Leu Val
 195 200 205
 Gln Ala Ala Arg Glu Lys Leu Arg Leu Trp Asn Leu Thr Asp Ala Gln
 210 215 220
 Ile Asp Ala Ile Gln Tyr Ser Gly Gln Ala Ser Pro Met Val Glu Ile
 225 230 235 240
 Lys Ser Asn Thr Asn Gly Ile Val Ile Ala Lys Arg Val Asn Arg Gly
 245 250 255

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Asp Tyr Val Ser Gln Gly Ser Ile Leu Phe Asp Ile Ala Asn Leu Ser
 260 265 270
 Arg Val Trp Ala Met Phe Asp Ala Phe Glu Val Asp Leu Pro Phe Leu
 275 280 285
 Ala Lys Gly Asp Arg Val Glu Phe Thr Leu Ser Ala Phe Pro Gly Lys
 290 295 300
 Thr Tyr Ser Gly Arg Ile Ser Phe Ile Asp Pro Ile Leu Asn Ala Thr
 305 310 315 320
 Thr Arg Thr Ala Arg Val Arg Val Asp Val Ala Asn Pro Thr Leu Glu
 325 330 335
 Met Lys Pro Glu Met Tyr Ala Thr Ala Gln Val Ala Ala Pro Leu Lys
 340 345 350
 Gly Tyr Lys Asp Arg Ile Val Val Pro Gln Thr Ala Val Leu Trp Thr
 355 360 365
 Gly Lys Arg Ala Val Val Tyr Val Arg Leu Pro Asp Thr Asp Thr Pro
 370 375 380
 Thr Phe Arg Met Arg Glu Val Thr Leu Gly Pro Ala Leu Gly Gly Ala
 385 390 395 400
 Tyr Val Val Leu Asp Gly Leu Ser Asp Gly Glu Glu Ile Val Thr Asn
 405 410 415
 Gly Val Phe Ser Ile Asp Ala Ser Ala Gln Leu Glu Gly Lys Arg Ser
 420 425 430
 Met Met Asn Glu Asp Thr Pro Gly Thr Ala Pro Met Thr Gly His Gln
 435 440 445
 Gly His Ser Met Ser Gly Met Ser Gly Ser His Ala Val Ser Gln Glu
 450 455 460
 Ser Glu His Val Leu Phe Ala Val Arg Gly Ser Cys Asp Met Cys Lys
 465 470 475 480
 Glu Arg Ile Glu Thr Ala Ala Lys Gly Val Ser Gly Val Arg Ser Ala
 485 490 495
 His Trp Asp Arg Glu Lys Gln Met Ile His Leu Gln Leu Asp Pro Ser
 500 505 510
 Glu Thr Ser Ala Asp Ala Val Ala Lys Ala Ile Ala Ala Ala Gly His
 515 520 525
 Asp Thr Asp Lys Tyr Lys Ala Val Lys Ala Val Tyr Asp Ala Leu Pro
 530 535 540
 Gly Cys Cys Lys Tyr Arg Asp Glu
 545 550

<210> 8729

<211> 394

<212> PRT

<213> B.fragilis

<400> 8729

Asn Met Lys Cys Asn Val Ser Tyr Lys Tyr Leu Phe Ile Ala Ile Gly
 1 5 10 15
 Ile Leu Cys Pro Leu Phe Ser Ala Cys Asp Tyr Ala Asp Gly Glu Gly
 20 25 30
 Ser Gly Ser Glu Asn Ala Val Tyr Met Glu Thr Pro Asp Asn Lys Gly
 35 40 45
 Ile Val Asn Phe Thr Leu Glu Pro Asp Gly Gly Ile Thr Tyr Leu Thr
 50 55 60
 Pro Arg Leu Ala Asn Ile Ser Gln Asn Pro Val Thr Ile Gln Val Gly
 65 70 75 80
 Tyr Asp Lys Glu Ala Leu Asp Lys Tyr Asn Lys Asp Asn Gly Ala Ser
 85 90 95
 Tyr Glu Pro Leu Pro Pro Ser Ala Phe Lys Leu Ala Asp Ala Glu Gly
 100 105 110

Asn Glu Leu Ser Ala Ser Glu Gly Ile Arg Val Pro Ala Gly Asp Phe
 115 120 125
 Ser Ala Lys Ile Met Val Lys Val Gly Gln Leu Asn Ser Lys Asp Phe
 130 135 140
 Pro Ala Asn Lys Lys Tyr Ala Ile Pro Leu Ser Ile Thr Gly Ala Ser
 145 150 155 160
 Asn Tyr Ser Leu Ile Pro Ser Gln Arg Ser Ala Ile Leu Leu Leu Asn
 165 170 175
 Arg Ser Ile Leu Ser Ser Val Ala Lys Val Ser Gly Gly Glu Gly Ile
 180 185 190
 Arg Ile Lys Pro Val Gly Met His Thr Lys Ala Glu Trp Thr Ile Gln
 195 200 205
 Met Ser Ala Ile Tyr Ser Ser Leu Thr Arg Ser Asn Leu Thr Thr Ala
 210 215 220
 Tyr Leu Ser Asn Gly Thr Gly Gly Ala Phe Tyr Thr Arg Ile Ser Ser
 225 230 235 240
 Thr Ala Gly Ile Gln Val Lys Asn Gly Arg Asp Gly Asp Asp Thr Trp
 245 250 255
 Thr Gln Ile Pro Leu Gln Ala Gly Lys Trp Leu His Ile Thr Tyr Val
 260 265 270
 His Lys Asp Lys Lys Thr Thr Val Tyr Val Asn Gly Lys Val Gln Lys
 275 280 285
 Val Phe Glu Asn Ser Ala Ile Thr Phe Gly Glu Asn Ser Met Ile Val
 290 295 300
 Val Gly Asn Ser Gly Tyr Arg Asn Asp Tyr Leu Arg Glu Ile Arg Leu
 305 310 315 320
 Trp Asp Lys Ala Leu Thr Glu Ser Glu Ile Asn Asp Tyr Leu Tyr Leu
 325 330 335
 Pro Met Asp Pro Ala Thr Pro His Leu Ile Ser Tyr Leu Pro Leu Ser
 340 345 350
 Lys Glu Met Glu Thr Lys Asp Leu Lys Ala Pro Ala Gly Thr Glu Asn
 355 360 365
 Val Thr Thr Lys Ala Arg Ile Glu Tyr Val Glu Asn Val Lys Phe Pro
 370 375 380
 Ala Asp Glu Leu Val Ile Val Asn Gln Glu
 385 390

<210> 8730

<211> 511

<212> PRT

<213> B.fragilis

<400> 8730

Lys Glu Arg Cys Asn Phe Ala Cys Gln Lys Ile Thr Tyr Leu Met Ala
 1 5 10 15
 Val Tyr Val Glu Glu Val Ser Arg Thr Phe Gly Glu Tyr Leu Leu Ile
 20 25 30
 Pro Gly Leu Thr Thr Lys Gln Cys Val Pro Ser Asn Val Ser Leu Arg
 35 40 45
 Thr Pro Leu Val Lys His Ala Ala Gly Thr Gln Ala Ala Ile Glu Leu
 50 55 60
 Asn Ile Pro Phe Val Ser Ala Ile Met Gln Ser Val Ser Gly Pro Glu
 65 70 75 80
 Leu Ala Ile Glu Leu Ala Arg Asn Gly Gly Leu Ser Phe Ile Phe Gly
 85 90 95
 Ser Gln Pro Ile Ala Ser Gln Ala Glu Met Val Arg Lys Val Lys Lys
 100 105 110
 Phe Lys Ala Gly Phe Val Thr Ser Asp Ser Asn Leu Thr Pro Glu His
 115 120 125

Thr Leu Glu Asp Val Leu Arg Leu Leu Arg Gln Thr Gly His Ser Thr
 130 135 140
 Ile Gly Ile Thr Asp Asp Gly Ser Pro Asn Gly His Leu Leu Gly Leu
 145 150 155 160
 Val Thr Ser Arg Asp Tyr Arg Ile Ser Arg Asp Pro Leu Asp Lys Lys
 165 170 175
 Ile Lys Asp Phe Met Thr Pro Phe Glu Lys Leu Ile Val Gly Glu Val
 180 185 190
 Gly Leu Thr Leu Ser Glu Ala Asn Gln Ile Ile Trp Asp His Lys Leu
 195 200 205
 Asn Thr Leu Pro Ile Ile Asp Lys Glu Gly Arg Leu Ala Tyr Phe Val
 210 215 220
 Phe Arg Lys Asp Tyr Asp Ser His Lys Glu Asn Pro Asn Glu Val Ser
 225 230 235 240
 Ser Pro Asp Lys Lys Leu Leu Val Gly Ala Gly Ile Asn Thr Arg Asp
 245 250 255
 Tyr Gln Glu Arg Val Pro Ala Leu Val Glu Ala Gly Val Asp Val Leu
 260 265 270
 Cys Ile Asp Ser Ser Asp Gly Tyr Ser Glu Trp Gln Tyr Glu Thr Leu
 275 280 285
 Gln Trp Ile Lys Gln Gln Tyr Gly Asp Lys Val Leu Val Gly Ala Gly
 290 295 300
 Asn Val Val Asp Lys Glu Gly Phe Leu Tyr Leu Ala Glu Ala Gly Ala
 305 310 315 320
 Asp Phe Val Lys Val Gly Ile Gly Gly Gly Ser Ile Cys Ile Thr Arg
 325 330 335
 Glu Gln Lys Gly Ile Gly Arg Gly Gln Ala Thr Ala Leu Gln Asp Val
 340 345 350
 Ala Arg Ala Arg Asp Glu Tyr Gln Ala Arg Thr Gly Ile Tyr Val Pro
 355 360 365
 Ile Cys Ser Asp Gly Gly Leu Val His Asp Tyr His Met Val Leu Ala
 370 375 380
 Leu Ala Met Gly Ala Asp Phe Leu Met Met Gly Arg Tyr Phe Ala Arg
 385 390 395 400
 Phe Asp Glu Ser Pro Thr Lys Lys Leu Cys Ile Lys Asn Asn Tyr Val
 405 410 415
 Lys Glu Tyr Trp Gly Glu Gly Ser Asn Arg Ala Gln Asn Trp Gln Arg
 420 425 430
 Tyr Asp Met Gly Gly Thr Glu Ser Leu Lys Phe Glu Glu Gly Val Asp
 435 440 445
 Ser Tyr Val Pro Tyr Ala Gly Lys Met Lys Asp Asn Leu Ala Ala Thr
 450 455 460
 Leu Ser Lys Ile Lys Ala Thr Met Cys Ser Cys Gly Ala Val Thr Ile
 465 470 475 480
 Pro Asp Leu Gln Gln Asn Ala Lys Ile Thr Leu Val Ser Ser Thr Ser
 485 490 495
 Ile Val Glu Gly Gly Ala His Asp Val Ile Leu Lys Glu Lys Gly
 500 505 510

<210> 8731

<211> 110

<212> PRT

<213> B.fragilis

<400> 8731

Ala Asp Leu Cys Tyr Leu Cys Gly Arg Thr Lys Ile Asn Arg Ala Met
 1 5 10 15
 Phe Val Leu Ile Leu Thr Tyr Lys Ala Pro Ile Glu Lys Val Ile Glu
 20 25 30

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

<400> 8732

Asp 1	Lys	Ser	Arg	Asp 5	Thr	Lys	His	Ala	Asn 10	Ser	Leu	Pro	Leu	Met 15	Asn
Ala	Asn	Val	Leu 20	Glu	Lys	Leu	Lys 25	Ile	Leu	Ala	Glu	Ser 30	Ala	Lys	Tyr
Asp	Val	Ser 35	Cys	Ala	Ser	Ser 40	Gly	Thr	Val	Arg	Ala 45	Asn	Lys	Pro	Gly
Thr 50	Leu	Gly	Asn	Thr	Val	Gly 55	Gly	Trp	Gly	Ile	Cys 60	His	Ser	Phe	Ala
Glu 65	Asp	Gly	Arg	Cys 70	Ile	Ser	Leu	Leu	Lys 75	Val	Met	Leu	Thr	Asn 80	Tyr
Cys	Ile	Tyr	Asp 85	Cys	Ala	Tyr	Cys	Ile 90	Asn	Arg	Arg	Ser	Asn 95	Asp	Leu
Pro	Arg	Ala 100	Thr	Leu	Ser	Val	Ser 105	Glu	Leu	Val	Asp	Leu 110	Thr	Ile	Glu
Phe	Tyr 115	Arg	Arg	Asn	Tyr	Ile 120	Glu	Gly	Leu	Phe	Leu 125	Ser	Ser	Gly	Val
Val 130	Arg	Asn	Pro	Asp 135	Tyr	Thr	Met	Glu	Arg	Leu 140	Val	Arg	Val	Ala	Lys
Asp 145	Leu	Arg	Glu	Val 150	His	Arg	Phe	Asn	Gly 155	Tyr	Ile	His	Leu	Lys 160	Ser
Ile	Pro	Gly 165	Ala	Ser	Arg	Glu	Leu 170	Val	Asn	Glu 175	Ala	Gly	Arg	Tyr 175	Ala
Asp	Arg	Leu 180	Ser	Val	Asn	Val	Glu 185	Ile	Pro	Lys	Glu	Glu 190	Asn	Leu	Lys
Leu	Leu 195	Ala	Pro	Glu	Lys	Asp 200	His	Lys	Ser	Val	Phe 205	Ala	Pro	Met	Leu
Tyr 210	Ile	Gln	Gln	Gly 215	Val	Leu	Glu	Ser	Ser	Glu 220	Glu	Arg	Lys	Lys	Phe
Arg 225	Tyr	Ala	Pro	Arg 230	Phe	Ala	Pro	Ala	Gly 235	Gln	Ser	Thr	Gln	Met 240	Ile
Val	Gly	Ala 245	Thr	Ala	Glu	Ser	Asp 250	Lys	Asp	Ile	Leu	Phe	Leu	Ser 255	Ser
Ala	Leu	Tyr 260	Gln	Arg	Pro	Thr	Met 265	Lys	Arg	Val	Tyr	Tyr 270	Ser	Gly	Tyr
Val	Ser 275	Val	Asn	Thr	Tyr	Asp 280	Thr	Arg	Leu	Pro	Ala 285	Leu	Lys	Gln	Pro
Pro	Leu 290	Val	Arg	Glu	Asn 295	Arg	Leu	Tyr	Gln	Ala 300	Asp	Trp	Leu	Met	Arg
Phe 305	Tyr	Gln	Phe	Lys 310	Val	Asn	Glu	Ile	Val 315	Asp	Thr	Tyr	Pro	Asp 320	
Leu	Asp	Leu	Glu 325	Ile	Asp	Pro	Lys	Leu 330	Ser	Trp	Ala	Leu	Arg	His 335	Pro

Glu Gln Phe Pro Val Asp Ile Asn Lys Ala Asp Tyr Glu Met Ile Leu
 340 345 350
 Arg Ile Pro Gly Ile Gly Val Lys Ser Ala Lys Leu Ile Ile Ala Ser
 355 360 365
 Arg Arg Tyr Ser Lys Leu Gly Tyr Tyr Gln Leu Lys Lys Ile Gly Val
 370 375 380
 Val Met Lys Lys Ala Gln Tyr Phe Ile Thr Cys Ser Glu Leu Pro Met
 385 390 395 400
 Arg Thr Val Asn Glu Met Thr Pro Gln Thr Val Arg Ser Leu Leu Leu
 405 410 415
 Pro Lys Ser Ala Lys Lys Lys Thr Asp Glu Asn Gln Leu Ser Phe Val
 420 425 430
 Phe Asn Asp
 435

<210> 8733

<211> 82

<212> PRT

<213> B.fragilis

<400> 8733

Phe Pro Ser Arg Val His His Phe Thr Asp Leu Arg Pro Val Leu Pro
 1 5 10 15
 Thr Ser Pro Glu Tyr Val Ser Pro Phe Ser Ser Arg Arg Tyr Ser Ala
 20 25 30
 Asn Arg Ser Val Thr Lys Asn Asn Ile Asn Arg Arg Phe Lys Gln Met
 35 40 45
 Pro Tyr Gln Phe Ala Ile Lys Glu Val Ala Gly Ile Thr Lys Ile Lys
 50 55 60
 Thr Ile Val Ser Ile Phe His Lys Thr Lys Lys Arg Ser Leu Phe Phe
 65 70 75 80
 Ile Tyr

<210> 8734

<211> 246

<212> PRT

<213> B.fragilis

<400> 8734

Leu Leu Leu Arg Leu Asn Lys Lys Thr Phe Asn Met Arg Arg Thr Ala
 1 5 10 15
 Ile Ala Leu Phe Cys Leu Phe Leu Leu Ser Val Gly Ile Gly Leu Arg
 20 25 30
 Ala Gln Asn Ile Gln Leu His Tyr Asp Phe Gly Arg Ser Leu Tyr Asp
 35 40 45
 Lys Asp Leu Lys Asp Arg Pro Val Leu Thr Ser Thr Val Glu Lys Phe
 50 55 60
 His Pro Asp Lys Trp Gly Ser Thr Tyr Phe Phe Val Asp Met Asp Tyr
 65 70 75 80
 Thr Ser Asp Gly Val Ala Ala Ala Tyr Trp Glu Ile Ala Arg Glu Leu
 85 90 95
 Lys Phe Trp Lys Asn Pro Phe Ser Val His Val Glu Tyr Asn Gly Gly
 100 105 110
 Leu Ala Lys Gly Phe Ser Tyr Gln Asn Ala Tyr Leu Gly Gly Val Thr
 115 120 125
 Tyr Thr Tyr Asn Asn Thr Ala Phe Ser Arg Gly Phe Ser Leu Ser Ala
 130 135 140
 Met Tyr Lys Tyr Ile Gln Lys His His Ser Pro Asn Asn Phe Gln Leu

145 150 155 160
 Thr Gly Thr Trp Tyr Met Asn Phe Ser Asn Asn Leu Leu Thr Phe Ser
 165 170 175
 Gly Phe Ala Asp Trp Trp Arg Glu Glu Thr Ala Tyr Gly Lys Thr Ile
 180 185 190
 Phe Leu Thr Glu Pro Gln Phe Trp Val Asn Leu Asn Arg Ile Lys Gly
 195 200 205
 Ile Ser Asp Lys Phe Lys Leu Ser Val Gly Ser Glu Val Glu Leu Ser
 210 215 220
 Asn Asn Phe Gly Gly Arg Asp Gly Phe Tyr Val Ile Pro Thr Leu Ala
 225 230 235 240
 Leu Lys Trp Thr Ile Asn
 245

<210> 8735
 <211> 703
 <212> PRT
 <213> B.fragilis

<400> 8735
 Lys Gln Ser Arg Met Lys Gln Lys Lys Met Leu Ser Leu Thr Leu Ser
 1 5 10 15
 Gln Ile Arg Gln Leu Tyr Cys Gln Glu Leu Pro Glu Leu Thr Ala Met
 20 25 30
 Ala Gln Gln Ser Leu Asp Asp Thr Asp Phe Lys Asn His Leu Gln Glu
 35 40 45
 Phe Leu Thr Pro Tyr Ile Ser Gly Gly Asn Lys Ala Gly Glu Gln Ile
 50 55 60
 Arg Leu Leu Ile Ser Tyr Asp Gly Lys Thr Val His Glu Leu Ser Asn
 65 70 75 80
 Glu Gln Asp Met Gln Ile Gln Thr Leu Ser Leu Leu Arg Arg Phe Leu
 85 90 95
 Thr Gly Asn Leu Glu Asn Ala Glu Ile Pro Thr Asp Leu Phe Leu Asp
 100 105 110
 Leu Tyr Tyr Leu Phe Lys Arg Leu Glu Glu Pro Glu Ser Pro Leu Pro
 115 120 125
 Ser Pro Gln Arg Ile Lys Asn Arg Thr Glu Arg Trp Ala Thr Gly Leu
 130 135 140
 Asp Glu Asp Val Ile Glu Leu Arg Ser Glu Asn Gln Glu Arg Met Leu
 145 150 155 160
 His Leu Leu Ile Gln Lys Ile Glu Asn Arg Lys Ser Lys Pro Ser Ser
 165 170 175
 Arg Phe His Phe Glu Glu Gly Met Ser Tyr Glu Glu Lys Tyr Gln Gln
 180 185 190
 Val Cys Gln Trp Trp Asn Asp Phe Arg Phe His Leu Ser Met Ala Ile
 195 200 205
 Lys Thr Pro Thr Glu Leu Asn Arg Phe Leu Gly Asn Ser Leu Ser Ser
 210 215 220
 Glu Thr Met Tyr Leu Leu Ser Arg Ala Arg Lys Lys Gly Met Pro Phe
 225 230 235 240
 Phe Ala Thr Pro Tyr Tyr Leu Ser Leu Leu Asn Thr Ser Gly Glu Gly
 245 250 255
 Tyr Asn Asp Glu Ala Ile Arg Ser Tyr Ile Leu Tyr Ser Pro Arg Leu
 260 265 270
 Val Glu Thr Tyr Gly Asn Ile Arg Ala Trp Glu Arg Glu Asp Ile Val
 275 280 285
 Glu Val Gly Lys Pro Asn Ala Gly Trp Leu Leu Pro Asp Gly His
 290 295 300
 Asn Ile His Arg Arg Tyr Pro Glu Val Ala Ile Leu Ile Pro Asp Thr

305 310 315 320
 Met Gly Arg Ala Cys Gly Gly Leu Cys Ala Ser Cys Gln Arg Met Tyr
 325 330 335
 Asp Phe Gln Ser Glu Arg Leu Asn Phe Glu Phe Asp Ala Leu Arg Pro
 340 345 350
 Lys Glu Ser Trp Asp Lys Lys Leu Arg Arg Leu Met Ser Tyr Phe Glu
 355 360 365
 Glu Asp Thr Gln Leu Arg Asp Ile Leu Ile Thr Gly Gly Asp Ala Leu
 370 375 380
 Met Ser Gln Asn Lys Thr Leu Lys Asn Ile Leu Glu Ala Val Tyr Arg
 385 390 395 400
 Met Ala Ala Arg Lys Arg Lys Ala Asn Gln Glu Arg Pro Glu Gly Glu
 405 410 415
 Lys Tyr Ala Glu Leu Gln Arg Val Arg Leu Gly Ser Arg Leu Leu Ala
 420 425 430
 Tyr Leu Pro Met Arg Ile Asn Asp Glu Leu Ile Glu Ile Leu Arg Glu
 435 440 445
 Phe Lys Glu Lys Ala Ser Val Ile Gly Val Lys Gln Phe Ile Ile Gln
 450 455 460
 Thr His Leu Gln Ser Pro Leu Glu Val Thr Pro Tyr Thr Arg Glu Ala
 465 470 475 480
 Ile Arg Lys Ile Leu Ser Ala Gly Trp Leu Ile Thr Asn Gln Leu Val
 485 490 495
 Tyr Thr Val Ala Ser Arg Arg Gly His Thr Thr Arg Leu Arg Gln
 500 505 510
 Val Leu Asn Ser Leu Gly Val Val Cys Tyr Tyr Thr Phe Ser Val Lys
 515 520 525
 Gly Phe Asn Glu Asn Tyr Ala Val Phe Thr Pro Asn Ser Arg Ser Met
 530 535 540
 Gln Glu Gln His Glu Glu Lys Ala Phe Gly Lys Leu Thr Gln Glu Gln
 545 550 555 560
 Ala Asp Glu Leu Tyr Ser Leu Leu Glu Thr Gly Glu Asp Ile Ala Thr
 565 570 575
 Arg Ile Arg His Phe Met Lys Lys His His Leu Pro Phe Met Ala Thr
 580 585 590
 Asp Arg Ser Val Leu Asn Leu Pro Ala Ile Gly Lys Ser Met Thr Phe
 595 600 605
 Asn Leu Val Gly Ile Thr Glu Glu Gly Arg Arg Ile Leu Arg Phe Asp
 610 615 620
 His Asp Ser Thr Arg Arg His Ser Ser Ile Ile Asp Lys Leu Gly Lys
 625 630 635 640
 Ile Tyr Ile Val Glu Asn Lys Ser Leu Ala Ala Tyr Leu Arg Gln Leu
 645 650 655
 Ser Lys Met Gly Glu Asp Pro Glu Asp Tyr Ala Ser Ile Trp Ser Tyr
 660 665 670
 Thr Glu Gly Glu Thr Glu Pro Arg Phe Lys Leu Tyr Glu Tyr Pro Glu
 675 680 685
 Phe Glu Phe His Thr Thr Glu Arg Met Ser Asn Leu Glu Val Leu
 690 695 700

<210> 8736

<211> 134

<212> PRT

<213> B.fragilis

<400> 8736

Phe Ser Phe Ser Glu Lys Ser Tyr Phe Ser Tyr Phe Cys Arg Met Lys
 1 5 10 15
 Thr Ile Cys Ile Ile Leu Gly Thr Ile Ser Leu Gly Leu Gly Ile Leu

	20		25		30
Gly	Ile	Phe	Leu	Pro	Leu
	35		40		45
Ala	Ala	Leu	Tyr	Phe	Lys
	50		55		60
Asn	His	Lys	Tyr	Phe	Gly
	65		70		75
Ala	Ile	Pro	Leu	Arg	Ala
			85		90
Thr	Met	Leu	Tyr	Cys	Ile
			100		105
Ile	Leu	Leu	Phe	Leu	Ile
			115		120
Phe	Lys	Thr	Leu	Lys	Lys
			130		

<210> 8737

<211> 404

<212> PRT

<213> B.fragilis

<400> 8737

Lys	Asn	His	Arg	Met	Lys	Val	Lys	Lys	Ile	Leu	Leu	Ser	Met	Cys	Ala
1				5					10					15	
Ile	Ala	Ala	Leu	Ala	Ser	Cys	Ser	Gln	Asn	Asp	Asp	Val	Ala	Val	Pro
			20					25					30		
Thr	Asp	Ser	Ala	Pro	Pro	Ala	Lys	Val	Thr	Ile	Arg	Phe	Ala	Gly	Ser
			35				40					45			
Glu	Gly	Met	Thr	Arg	Ala	Ile	Gly	Ser	Glu	Asp	Ala	Val	Val	Asn	Asn
			50			55					60				
Leu	Thr	Ala	Phe	Phe	Phe	Asn	Thr	Ala	Gly	Ala	Leu	Ile	Lys	Ala	Pro
			65			70			75					80	
Met	Pro	Val	Ala	Gly	Asn	Asp	Leu	Lys	Pro	Glu	Ile	Thr	Leu	Ala	Thr
				85					90					95	
Thr	Thr	Asp	Ala	Ser	Gln	Val	Val	Leu	Val	Ala	Asn	Val	Pro	Ala	Gly
			100					105					110		
Thr	Ala	Phe	Ala	Gly	Val	Thr	Ser	Leu	Ser	Lys	Leu	Lys	Glu	Phe	Val
			115				120						125		
Val	Ser	Ser	Leu	Gly	Thr	Glu	Ala	Ser	Ser	Asn	Phe	Pro	Ile	Asn	Gln
			130			135					140				
Thr	Lys	Thr	Asn	Leu	Thr	Met	Ser	Gly	Trp	Gly	Ala	Ile	Asn	Met	Asn
				145		150				155					160
Ala	Asp	Asn	Asn	Thr	Gly	Thr	Ala	Asn	Val	Lys	Leu	His	Phe	Met	Ala
				165					170					175	
Ala	Lys	Ile	Glu	Thr	Leu	Lys	Val	Thr	Ile	Gly	Gly	Lys	Asn	Val	Gly
			180					185					190		
His	Tyr	Ala	Asp	Thr	Glu	Asp	Gly	Val	Thr	Asp	Asp	Lys	Trp	Phe	Thr
			195				200					205			
Ile	Lys	Gln	Ala	Tyr	Leu	Met	Met	Ala	Gln	Thr	Asn	Ser	Val	Leu	Leu
			210			215					220				
Pro	Ala	Thr	Asp	Leu	Gly	Ala	Trp	Thr	Gly	Ala	Phe	Thr	Pro	Ala	Thr
			225			230				235					240
Phe	Ala	Tyr	Ala	Gly	Gly	Leu	Ala	Trp	Gly	Thr	Arg	Pro	Trp	Glu	Asn
				245					250					255	
Pro	Pro	Val	Asn	Pro	Asp	Pro	Val	Lys	Ala	Thr	Asp	Tyr	Leu	Gln	Thr
			260					265					270		
Thr	Ile	Pro	Ala	Gly	Ala	Thr	Ser	Asn	Val	Ile	Asp	Asn	Ile	Leu	Val
			275				280					285			
Ser	Ala	Pro	Trp	Tyr	Val	Phe	Glu	Asn	Ala	Ser	Pro	Asn	Ala	Thr	Gly

290	Val Val Leu Glu Val Val Cys Asn Val Arg Lys Asp Asn Asn Thr Leu	295	300
305		310	315
Glu Lys Glu Ser Arg Tyr Phe Thr Met Tyr Phe Gly Glu Lys Lys Thr		325	330
		330	335
Gly Asp Ser Gly Asn Gln Pro Ile Leu Asn Ala Gly Gln Arg Tyr Ser		340	345
		345	350
Ile Asn Ile Ala Leu Asn Gly Ser Phe Asp Pro Gly Asp Gly Thr Gly		355	360
		360	365
Gly Gly Gly Thr Thr Asp Pro Thr Lys Pro Ser Val Asp Ala Asn Val		370	375
		375	380
Glu Ile Thr Val Ala Pro Ala Glu Trp Thr Ala Val Ala Val Ile Asn		385	390
		390	395
Lys Glu Phe Asn			400

<210> 8738

<211> 777

<212> PRT

<213> B.fragilis

<400> 8738

Arg Lys Asn Ser Asn Arg Thr Met Ile Lys His Tyr Leu Lys Val Ala	
1 5 10 15	
Leu Arg Asn Leu Met Asn Phe Lys Val His Ser Leu Ile Ser Ala Ile	
20 25 30	
Cys Leu Ala Ile Gly Ile Thr Cys Phe Ser Met Met Asn Tyr Phe Ile	
35 40 45	
Asp Ala Ile Thr Gly Lys Val Glu Leu Ser Asp Asn Asn Lys Tyr Ser	
50 55 60	
Ile Arg Leu Ser Gly Ala Ser Ser Gln Thr Ala Ala Asp Ile Tyr Leu	
65 70 75 80	
Phe Lys Glu Asp Phe Asp Tyr Leu Lys Glu Leu Pro Ile Ala Gly Ile	
85 90 95	
Asp Thr Leu Val Ala Ser Ser Ser Tyr Ser Asn Gly Lys Glu Ile Thr	
100 105 110	
Ala Ile Asp Lys Lys Gln Arg Glu Leu Pro Phe Leu Val Ser Phe Gln	
115 120 125	
Asn Val Ser Ser Asn Tyr Phe Thr Tyr Asn Ser Leu Gln Leu Lys Tyr	
130 135 140	
Gly Asn Gln Glu Ile Thr Ala Pro Asp Glu Val Ile Val Ser Arg Ser	
145 150 155 160	
Phe Ala Arg Lys Ala Phe Gly Glu Glu Asn Pro Ile Gly Gln Val Ile	
165 170 175	
Arg Gln Glu Thr Glu Ala Ala Asn Pro Ser Asp Leu Met Val Tyr Lys	
180 185 190	
Ile Val Asn Val Ala Leu Thr Glu Glu Lys Asp Phe His Gly Lys Thr	
195 200 205	
Ile Asp Cys Tyr Phe Pro Leu Ser Ala Lys Ser Arg Thr Pro Leu Cys	
210 215 220	
Ile Arg Ser Arg Leu Thr Gly Gln Thr Thr Thr Glu Ser Leu Asn Lys	
225 230 235 240	
Gln Leu Lys Gly Leu Thr Trp Lys His Gly Asp Gln Asp Ile Tyr Leu	
245 250 255	
Tyr Ala Ser Leu Glu Ser Glu Gln Asn Ser Ser Val Gln Arg Thr Ile	
260 265 270	
Ser Ile Leu Leu Ala Arg Phe Ile Ala Ser Leu Ile Leu Leu Ser Gly	
275 280 285	
Leu Ile Asn Phe Leu Lys Phe Ile Ile Gln Met Phe Tyr Asn Arg Gln	

290	295	300
Arg Glu Leu Val Leu Arg Lys Cys Ile Gly Ser Asp Ile Lys Gly Leu		
305	310	315
Phe Ala Leu Leu Phe Ala Glu Ile Phe Trp Met Leu Ser Val Ala Phe		320
	325	330
Leu Leu Ser Leu Ala Val Thr Glu Ile Thr Leu Ser Leu Val Tyr Thr		335
	340	345
Tyr Ile Arg Pro Glu Asp Met Ile Ser Phe Ser Leu Val Asp Leu Tyr		350
	355	360
Gly Ser Gln Leu Gly Leu Tyr Leu Ala Leu Leu Leu Ile Cys Met Leu		365
	370	375
Ala Ile Leu Tyr Pro Ile Tyr Arg Leu Arg Arg Leu Ser Val Leu His		380
385	390	395
Ser Val Val Gln Arg Gln Lys Arg His Val Phe Arg Asn Phe Met Ile		400
	405	410
Ala Leu Gln Leu Ala Ile Ser Ile Leu Phe Thr Gly Gly Val Phe Gly		415
	420	425
Ile Thr Leu Leu Phe Asn Glu Met Phe Glu Gly Met Tyr Arg Pro Leu		430
	435	440
Ser Thr Glu Glu Glu Asn Arg Val Ile Ser Ile Ser Val Asn Thr Ile		445
450	455	460
Cys Met Gln Lys Asn Met Asp Ala Ile Leu Ser Asp Ile Gln Ser Leu		465
465	470	475
Ser Glu Ile Thr Asp Arg Thr Ser Ala Phe Asn Thr Phe Asp Ala Asp		480
	485	490
Val Tyr Thr Tyr Met Thr Tyr Met Lys Asp Gly Lys Pro Arg Gly Asn		495
	500	505
Val Met Met Ile Gln Ala Glu Pro His Tyr Phe Glu Phe Phe Lys Ile		510
	515	520
Pro Phe Ser Gly Lys Leu Val Asp Lys Asp Ala Gln Gly Phe Val Tyr		525
530	535	540
Ile Ser Glu Gln Phe Lys Glu Gln Leu Gln Arg Asp Ser Ile Ala Gly		545
545	550	555
Ser Val Thr Leu Asp Gly Lys Glu Tyr Arg Ile Ala Gly Thr Tyr Arg		560
	565	570
Ala Leu Asn Arg Glu Asp Thr Gln Ser Ser Ser Val Gly Ser Val Phe		575
	580	585
Leu Val Asn Pro Gln Ala Tyr Thr Tyr Tyr Phe Lys Thr Leu His Ser		590
	595	600
Asp Ile Thr Pro Val Ala Leu Glu Lys Ile Thr Glu Ile Cys Arg Arg		605
610	615	620
Tyr Val Pro Glu Thr Leu Pro Leu Asn Ile Arg Asn Thr Gly Asp Ser		625
625	630	635
Lys Gln Ser Val Met Gly Thr Val Ala Leu Leu Gln Thr Ala Ser Leu		640
	645	650
Leu Leu Ala Ile Val Ser Ile Leu Leu Leu Ile Leu Ser Ile Tyr Ser		655
	660	665
Gly Ile Ser Met Asp Val Ile Asn Arg Gln Lys Glu Val Ala Ile Arg		670
	675	680
Lys Ile Asn Gly Ala Thr Pro Arg Val Ile Ala Leu Leu Phe Gly Lys		685
690	695	700
Ile Tyr Leu Ile Ile Tyr Leu Ser Val Phe Val Ile Ile Tyr Pro Leu		705
705	710	715
Val Arg Leu Val Leu Ile Ser Ile Thr Gln Lys Ser Asn Leu Gln Ser		720
	725	730
Ile Tyr Ser Trp Ser Trp Gly Val Leu Phe Phe Thr Met Ala Leu		735
	740	745
Leu Ile Phe Leu Val Thr Ala Tyr Lys Ile Tyr Lys Val Met His Leu		750
755	760	765

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Asn Pro Ala Ser Val Leu Lys Lys Glu
770 775

<210> 8739
<211> 316
<212> PRT
<213> B.fragilis

<400> 8739

Gln	Pro	Gly	Arg	Gln	Glu	Gly	Pro	Asp	Arg	Pro	His	Tyr	Asn	Lys	Arg
1				5					10					15	
Ser	His	Asn	Thr	Gln	Val	Val	Gln	Glu	Met	Ala	Thr	Ala	Ile	Ser	Ala
			20					25					30		
Gln	Ser	Val	Thr	Ser	Arg	Lys	Lys	Gly	Ala	Met	Lys	Arg	Thr	Ile	Leu
	35						40					45			
Ile	Leu	Leu	Gly	Trp	Met	Leu	Leu	Ser	Gln	Gly	Cys	Ser	Tyr	Gly	Val
	50					55					60				
Gly	Asp	Asp	Cys	Leu	Pro	Pro	Glu	Glu	Pro	Val	Pro	Ile	Arg	Met	Ala
65					70					75				80	
Ile	Ala	Glu	Gly	Lys	Leu	Ser	Thr	Arg	Ala	Pro	Val	Thr	Thr	Ile	Asp
				85					90					95	
Ala	Ser	Asn	Leu	Ser	Asn	Val	Gly	Ile	Tyr	Ala	Val	Ser	Glu	Gly	Ser
			100					105					110		
Ile	Ala	Gly	Gln	Tyr	Pro	Trp	Thr	Ser	Thr	Pro	Phe	Ala	Leu	Asn	Leu
		115					120					125			
Val	Pro	Ser	Gly	Ile	Ser	Gly	Ser	Gln	Leu	Ser	Phe	Asn	Pro	Lys	Leu
	130					135					140				
Tyr	Tyr	Pro	Leu	Gly	Gly	Lys	Arg	Val	Ile	Phe	Tyr	Ser	Tyr	Tyr	Pro
145					150					155					160
Arg	Thr	Thr	Ala	Thr	Ser	Gly	Ser	Asn	Tyr	Ile	Thr	Ala	Pro	Gly	Asn
				165					170					175	
Gly	Val	Ala	Pro	Ala	Tyr	His	Phe	Thr	Leu	Thr	Gly	Ala	Glu	Asp	Ile
			180					185					190		
Met	Tyr	Ala	Ala	Gly	Thr	Pro	Thr	Gly	Ser	Thr	Ser	Thr	Met	Pro	Val
		195					200					205			
Ser	Leu	Thr	Phe	Asn	His	Val	Leu	Thr	Gln	Leu	Gln	Leu	Asn	Thr	Ser
	210					215					220				
Leu	Leu	Gly	Ala	Leu	Ser	Ser	Ile	Lys	Leu	Leu	Gly	Val	Tyr	Asn	Lys
225					230					235					240
Gly	Thr	Leu	Asp	Ile	Gly	Asn	Gly	Asn	Val	Thr	Tyr	Asp	Ser	Ser	Thr
				245					250					255	
Thr	Asp	Ile	Thr	Leu	Thr	Val	Pro	Leu	Leu	Gly	Ser	Val	Thr	Asn	Thr
			260					265					270		
Val	Met	Val	Pro	Ala	Gly	Val	Ala	Ser	Tyr	Lys	Val	Glu	Val	Val	Leu
		275					280					285			
Leu	Leu	Ser	Leu	Leu	Lys	Arg	Thr	Tyr	Leu	Val	Lys	Pro	Thr	Ser	Gly
	290					295					300				
Asn	Phe	Gln	Pro	Gly	Val	Ile	Tyr	Thr	Ile	Ser	Leu				
305					310					315					

<210> 8740
<211> 170
<212> PRT
<213> B.fragilis

<400> 8740

Glu	Tyr	Lys	Ser	Met	Glu	Ile	His	Ile	Gly	Asn	Arg	Val	Ala	Glu	Ile
1				5					10					15	
Glu	Leu	Val	Ser	Lys	Glu	Asp	Asn	Lys	Val	Val	Leu	Thr	Ile	Asp	Gly

[illegible][illegible][illegible]

260	265	270
Asp Gly Ile Asp Arg Ala Lys Leu	Asp Tyr Ile Met Glu Leu Lys Asn	
275	280	285
Leu Tyr Arg Gly Arg Ile Arg Glu Tyr Ala Glu Thr Tyr Gly Cys Lys		
290	295	300
Tyr Val Glu Gly Ala Arg Pro Trp Gly Glu Lys Gly Asp Ile Ala Leu		
305	310	315
Pro Ser Ala Thr Gln Asn Glu Leu Asn Gly Asp Asp Ala Arg Lys Leu		
325	330	335
Val Ala Asn Gly Val Ile Ala Val Ser Glu Gly Ala Asn Met Pro Ser		
340	345	350
Thr Pro Glu Ala Ile Lys Val Phe Gln Asp Ala Lys Ile Leu Tyr Ala		
355	360	365
Pro Gly Lys Ala Ala Asn Ala Gly Gly Val Ser Val Ser Gly Leu Glu		
370	375	380
Met Thr Gln Asn Ser Ile Lys Leu Ser Trp Ser Ser Glu Glu Val Asp		
385	390	395
Glu Lys Leu Lys Ser Ile Met Lys Asn Ile His Glu Ala Cys Val Gln		
405	410	415
Tyr Gly Thr Glu Pro Asp Gly Tyr Val Asn Tyr Val Lys Gly Ala Asn		
420	425	430
Val Ala Gly Phe Met Lys Val Ala Lys Ala Met Met Ala Gln Gly Ile		
435	440	445
Val		

<210> 8742

<211> 294

<212> PRT

<213> B.fragilis

<400> 8742

Asn Asn Arg Ser Met Lys Lys Leu Met Phe Ala Val Ile Ala Cys Ala	
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Met Gly Leu Ser Gly Cys Ser Ser Glu Asp Asp Cys Ala Thr Asn Pro	
20 25 30	
Glu Pro Ala Gly Asp Val Thr Glu Ile Lys Leu Ser Ala Gly Ile Gln	
35 40 45	
Gly Val Ala Thr Arg Ser Pro Val Ser Thr Asn Asp Asn Ile Thr Ala	
50 55 60	
Pro Phe Val Ala Ser Ala Thr Thr Gly Asp Tyr Thr Thr Asn Ala Trp	
65 70 75 80	
Ser Ser Thr Val Thr Phe Val Ala Ser Pro Thr Pro Thr Ala Ala Leu	
85 90 95	
Ser Phe Ser Pro Ala Arg Tyr Tyr Pro Val Asp Asn Ser Pro Ile Tyr	
100 105 110	
Ile Arg Gly Tyr Tyr Pro Ala Gly Thr Leu Ser Gly Lys Thr Val Thr	
115 120 125	
Leu Ala Gly Asp Gly Thr Glu Asp Val Met Leu Thr Ala Gln Ala Ser	
130 135 140	
Gly Thr Lys Ala Thr Ala Gly Ala Leu Ser Phe Val Phe Asn His Leu	
145 150 155 160	
Leu Thr Gln Leu Gln Phe Lys Leu Val Ala Gly Ala Gly Tyr Pro Ala	
165 170 175	
Ser Gly Val Asn Val Thr Ser Leu Val Ile Lys Gln Gln Lys Thr Pro	
180 185 190	
Ala Thr Leu Asp Leu Asn Thr Ser Ser Leu Thr Tyr Thr Thr Lys Asp	
195 200 205	
Leu Thr Leu Ser Gly Thr Phe Pro Ile Leu Thr Ala Gly Ser Thr Ile	

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<210> 8743
<211> 936
<212> PRT
<213> B.fragilis
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Arg	Gln	Thr	Ser	Ile	Leu	Gln	Met	Phe	Ser	Leu	His	Ser	Pro	Asp	Asp
1				5					10					15	
Ser	Tyr	Asp	Glu	Ala	Phe	Leu	Ala	Asn	Tyr	Ile	Ser	Ile	Asn	Leu	Lys
			20					25					30		
Pro	Glu	Ile	Leu	Arg	Ile	Ser	Gly	Val	Gly	Asp	Met	Met	Ile	Met	Glu
		35					40					45			
Gly	Asp	Tyr	Ser	Leu	Arg	Ile	Trp	Met	Lys	Pro	Asp	Val	Met	Ala	Gln
	50					55					60				
Tyr	Arg	Leu	Ile	Pro	Ser	Asp	Val	Ser	Thr	Val	Leu	Ala	Glu	Gln	Asn
65					70					75					80
Ile	Glu	Ser	Ala	Thr	Gly	Ser	Phe	Gly	Glu	Asn	Ser	Asp	Glu	Thr	Tyr
				85					90					95	
Gln	Tyr	Thr	Met	Lys	Tyr	Lys	Gly	Arg	Arg	Ile	Thr	Pro	Glu	Glu	Phe
			100					105					110		
Gly	Glu	Ile	Val	Ile	Arg	Ser	Thr	Asp	Asp	Gly	Gln	Val	Leu	Lys	Leu
		115					120					125			
Lys	Asp	Ile	Ala	Thr	Ile	Glu	Leu	Gly	Gln	Glu	Ser	Tyr	Ala	Tyr	Ser
	130					135					140				
Gly	Thr	Thr	Asp	Gly	His	Asn	Gly	Val	Ser	Cys	Met	Leu	Phe	Gln	Thr
145					150					155					160
Ala	Gly	Ser	Asn	Ala	Thr	Glu	Val	Asn	Asn	Gln	Ile	Asn	Arg	Phe	Leu
				165					170					175	
Glu	Glu	Ala	Arg	Lys	Glu	Leu	Pro	Gln	Gly	Val	Glu	Leu	Thr	Gln	Leu
		180						185					190		
Met	Ser	Ser	Asn	Asp	Phe	Leu	Tyr	Ala	Ser	Ile	His	Glu	Val	Val	Lys
		195					200					205			
Thr	Leu	Leu	Glu	Ala	Ile	Leu	Leu	Val	Ile	Leu	Val	Val	Tyr	Val	Phe
	210					215					220				
Leu	Gln	Asp	Ile	Arg	Ser	Thr	Leu	Ile	Pro	Leu	Val	Gly	Ile	Ile	Val
225				230						235					240
Ser	Leu	Ile	Gly	Thr	Phe	Ala	Phe	Met	Ala	Ile	Ala	Gly	Phe	Ser	Ile
				245					250					255	
Asn	Leu	Ile	Thr	Leu	Phe	Ala	Leu	Val	Leu	Val	Ile	Gly	Thr	Val	Val
		260						265					270		
Asp	Asp	Ala	Ile	Val	Val	Val	Glu	Ala	Val	Gln	Ala	Arg	Phe	Asp	Val
		275					280					285			
Gly	Tyr	Lys	Ser	Ser	Tyr	Met	Ala	Ser	Val	Asp	Ala	Met	Lys	Gly	Ile
	290					295					300				
Ser	Asn	Ala	Val	Ile	Thr	Ser	Ser	Leu	Val	Phe	Met	Ala	Val	Phe	Ile
305					310					315					320
Pro	Val	Ser	Phe	Met	Ser	Gly	Thr	Ser	Gly	Thr	Phe	Tyr	Thr	Gln	Phe

[illegible]

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

Met Leu Ile Gly Leu Leu Ala Lys Thr Ala Ile Leu Leu Thr Glu Tyr
 805 810 815
 Ala Ala Glu Arg Arg Lys Ala Gly Met Gly Leu Ile Ala Ser Ala Leu
 820 825 830
 Ser Ala Ala Lys Ala Arg Leu Arg Pro Ile Leu Met Thr Ala Leu Thr
 835 840 845
 Met Ile Phe Gly Leu Leu Pro Leu Met Val Ala Ser Gly Val Gly Ala
 850 855 860
 Asn Gly Asn Arg Ser Leu Gly Thr Gly Ala Val Gly Gly Met Val Ile
 865 870 875 880
 Gly Thr Leu Ala Leu Leu Phe Ile Val Pro Ser Leu Phe Ile Ala Phe
 885 890 895
 Gln Trp Leu Gln Glu Arg Ile Arg Pro Val Gln Ile Glu Pro Ser His
 900 905 910
 Asp Trp Gln Ile Gln Thr Glu Gln Glu Val Ser Glu His Glu Lys Glu
 915 920 925
 Glu Ala Lys Asn Arg Pro Leu Lys
 930 935

<210> 8744
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 <212> PRT
 <213> B.fragilis

<400> 8744
 His Lys Lys Gly Cys Met Asn Asp Lys Ile Lys Ile Asn Leu Gln Ile
 1 5 10 15
 Ala Asp Ser Tyr Tyr Pro Leu Thr Ile Asn Arg Asp Glu Glu Glu Thr
 20 25 30
 Val Arg Glu Ala Ala Lys Gln Val Asn Ile Arg Leu Asn Ala Tyr Arg
 35 40 45
 Glu His Tyr Arg Asn Val Ala Pro Glu Lys Ile Ile Ala Met Val Ala
 50 55 60
 Tyr Gln Phe Ser Leu Glu Lys Leu Gln Leu Leu Gln Arg Asn Asp Thr
 65 70 75 80
 Gln Pro Tyr Thr Ala Lys Ile Glu Glu Leu Thr Glu Met Leu Glu Glu
 85 90 95
 Tyr Phe Arg Asn Glu Glu
 100

<210> 8745
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 <212> PRT
 <213> B.fragilis

<400> 8745
 Lys Arg Thr Gly Leu Ile Cys Asn Arg Tyr Glu Asn Ile Leu Ser Cys
 1 5 10 15
 Arg Asp Asp Ile Arg Arg Ile Asn Thr Thr Phe Val Gly Ile Gln Arg
 20 25 30
 Phe Gln Pro Asn Ile Asn Pro Tyr Asn Met Thr Pro Asp Phe Asp Tyr
 35 40 45
 Ser Glu Val Pro Phe Gly Phe Asn Tyr Cys Leu Asn Lys Ser Cys Lys
 50 55 60
 Gln Ala Ser Thr Cys Leu Arg Tyr Arg Leu Tyr Thr His Ile Pro Ala
 65 70 75 80
 Ala Cys Gln Thr Ile Arg Ile Ile Asn Pro Val Tyr Ala Ala Thr Ile
 85 90 95
 Asp Asp Val Cys Pro Phe Phe Met Pro Asp Lys Lys Val Arg Tyr Ala

100 105 110
 Leu Gly Ile Thr His Leu Leu Asp His Val Pro Tyr Ser Asp Ala Val
 115 120 125
 Ser Ile Lys Arg Gln Met Leu Ala His Phe Lys Gln Ala Thr Tyr Tyr
 130 135 140
 Arg Cys Arg Arg Lys Glu Arg Met Leu Asp Pro Ser Glu Gln Glu Tyr
 145 150 155 160
 Ile Arg Lys Leu Phe Val Ser Lys Gly Ile Lys Glu Leu Pro Val Tyr
 165 170 175
 Asp Glu Tyr Ile Glu Lys Tyr Asp Trp
 180 185

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 <212> PRT
 <213> B.fragilis

<400> 8746
 Gly Met Lys Gly Thr Tyr Trp Tyr Ala Val Asp Tyr Ala Gly Thr Gly
 1 5 10 15
 His Leu Phe Thr Tyr Lys Pro Glu Arg Asp Ala Gly Ile Trp Asn Gly
 20 25 30
 Glu Glu Ala Leu Gln Val Ser Gln Gly Ala Leu Arg Glu Val Phe Pro
 35 40 45
 Lys Ile Thr Trp Gln Asp Ser Pro Val Val Val Thr Leu Glu Val Leu
 50 55 60
 Pro Cys Glu Glu Thr Phe Arg Leu Arg Leu Ser Lys Asn Cys Gly Tyr
 65 70 75 80
 Ile Leu Arg Lys Tyr Leu Arg Phe Pro Arg Lys Glu Lys Thr Asn Asp
 85 90 95

<210> 8747
 <211> 142
 <212> PRT
 <213> B.fragilis

<400> 8747
 Tyr Pro Leu Ile Lys Arg Ile Thr Asn Lys Asn Ile Met Asn Leu Arg
 1 5 10 15
 Thr Phe Ile Glu Arg Pro Val Leu Ser Ala Val Ile Ser Ile Thr Ile
 20 25 30
 Val Val Val Gly Ile Ile Gly Leu Phe Thr Leu Pro Val Glu Gln Tyr
 35 40 45
 Pro Asp Ile Ala Pro Pro Thr Ile Met Val Ser Thr Ser Tyr Phe Gly
 50 55 60
 Ala Ser Ala Glu Thr Leu Gln Lys Ser Val Ile Ala Pro Leu Glu Glu
 65 70 75 80
 Ala Ile Asn Gly Val Glu Asp Met Thr Tyr Met Thr Ser Ser Ala Thr
 85 90 95
 Asn Ala Gly Thr Val Ser Ile Thr Val Tyr Phe Lys Gln Gly Thr Asp
 100 105 110
 Pro Asp Met Ala Ala Val Asn Val Gln Asn Arg Val Ser Lys Ala Thr
 115 120 125
 Gly Gln Leu Pro Ser Glu Val Asn Gln Val Gly Val Thr Thr
 130 135 140

<210> 8748
 <211> 374
 <212> PRT

<213> B.fragilis

<400> 8748

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Ile Gly Ile Met Ile Glu Lys Val Ser Lys Val Lys Gln Ala Ile Leu
1      5      10      15
Phe Ala Cys Cys Leu Ala Ala Thr Gly Cys Lys Gln Ala Pro Gln Ala
20      25      30
Thr Val Glu Ser Gly Tyr Lys Val Ile Thr Leu Ala Pro Thr Asp Arg
35      40      45
Thr Leu Ser Ser Thr Tyr Ser Ala Thr Ile Arg Gly Arg Gln Asp Ile
50      55      60
Glu Ile Tyr Pro Gln Val Ser Gly Thr Leu Thr Gln Val Cys Val Ser
65      70      75      80
Glu Gly Glu Arg Val Lys Arg Gly Gln Ser Leu Phe Ile Ile Asp Gln
85      90      95
Val Pro Tyr Glu Ala Ala Leu Gln Thr Ala Leu Ala Asn Val Glu Ala
100     105     110
Ala Lys Ala Ser Leu Ala Thr Ala Gln Leu Thr Tyr Asp Ser Lys Gln
115     120     125
Glu Leu Tyr Lys Gln Asn Val Val Ser Thr Phe Asp Leu Ser Thr Ala
130     135     140
Lys Asn Ser Leu Leu Ala Ala Gln Ala Gln Leu Ala Gln Met Lys Ala
145     150     155     160
Gln Glu Val Asn Ala Arg Asn Asn Leu Ser Tyr Thr Leu Val Lys Ser
165     170     175
Pro Ala Asp Gly Val Val Gly Thr Leu Pro Tyr Arg Val Gly Thr Leu
180     185     190
Val Ser Ala Ser Leu Pro Glu Pro Leu Thr Thr Val Ser Asp Asn Ser
195     200     205
Asp Met Tyr Val Tyr Phe Ser Met Thr Glu Asn Gln Leu Leu Gly Leu
210     215     220
Ile Arg Arg Tyr Gly Ser Lys Glu Glu Ala Leu Lys Gln Met Pro Glu
225     230     235     240
Ile Gly Leu Gln Leu Asn Asp Arg Ser Asp Tyr Pro Gln Gln Gly Arg
245     250     255
Ile Glu Thr Ile Ser Gly Val Ile Asp Arg Asn Thr Gly Thr Val Ser
260     265     270
Leu Arg Ala Val Phe Pro Asn Arg Glu Gly Leu Leu His Ser Gly Gly
275     280     285
Ala Gly Asn Val Ile Val Pro Thr Glu Lys Ala Gly Ala Leu Val Ile
290     295     300
Pro Gln Ala Ala Thr Phe Glu Val Gln Asp Lys Val Phe Ala Tyr Lys
305     310     315     320
Val Val Asp Gly Lys Ala Gln Ser Ala Pro Val Gln Val Thr Arg Val
325     330     335
Asn Gly Gly Gln Glu Tyr Ile Val Glu Ser Gly Leu Gln Pro Gly Asp
340     345     350
Val Ile Val Ala Glu Gly Val Gly Leu Leu Arg Glu Gly Thr Glu Ile
355     360     365
Lys Thr Ile Asn Gly Glu
370

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<210> 8749

<211> 61

<212> PRT

<213> B.fragilis

<400> 8749

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Ile Arg Ile Met Lys Glu Leu Val Glu Lys Ile Ala Thr Leu Val Ala

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Glu Phe Asn Lys Asp Ala Asn Ala Gln Ile Glu Asn Gly Asn Lys Ala			
20	25	30	
Ala Gly Thr Arg Ala Arg Lys Ala Ser Leu Glu Ile Glu Lys Ala Met			
35	40	45	
Lys Glu Phe Arg Lys Val Ser Leu Glu Glu Ser Lys Lys			
50	55	60	

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 <212> PRT
 <213> B.fragilis

<400> 8750

Arg Gly Val Met Gly Arg Arg Asn Arg Ile Met His Lys Met Thr Glu			
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Met Glu Ile Thr Tyr Asn Ile Gln Thr Ile Tyr Thr Tyr Arg Asn Glu			
20	25	30	
Asn Met Pro Glu Asp Ser Thr Lys Val Tyr Arg Phe Ser Arg Lys Val			
35	40	45	
Ser Arg Arg Ile Trp Lys Tyr Ala Leu Ser Thr Pro Asp Phe Arg Ser			
50	55	60	
Phe Leu Glu Ala Lys Ser Arg Glu Cys Ser Asp Thr Ile Ser Arg Met			
65	70	75	80
Asn Gln Glu Leu Gln Asn Val Val Val Thr Phe His Ile Ser Phe Asn			
85	90	95	
Gly Asp Ile Pro Phe Val Gly Ser Ala Val Cys Phe Phe Lys Thr Val			
100	105	110	
Ser Gly Gly Glu Leu Arg Cys Arg Tyr Asn Gln Ser Ile Leu Phe Glu			
115	120	125	
Glu Thr Leu Pro Gly Gly Lys Tyr Leu Arg Asp Ser Ser Ile Glu Gly			
130	135	140	
Met Ile Gln Lys Glu Arg Pro Glu Asn Ser Ala Phe Gly Leu Leu Leu			
145	150	155	160
Phe Ala Val Ser Leu Val Ser Val Phe Gly Ile Leu Thr Val Pro Phe			
165	170	175	
Ala Phe Asn Leu Ala Arg Phe Pro Leu Val Pro Ala Gly Phe Thr Val			
180	185	190	
Ile Ala Val Leu Ile Leu Leu Thr Val Cys Leu Arg His Met Asn Arg			
195	200	205	
Arg Arg Ile Thr Arg Arg Met Glu Ile Gln Asp Lys Arg Gln Glu Pro			
210	215	220	
Ile Lys			
225			

<210> 8751
 <211> 411
 <212> PRT
 <213> B.fragilis

<400> 8751

Phe Cys Tyr Ile Lys Leu Lys Leu Met Thr Ser Val Lys Leu Lys Leu			
1	5	10	15
Asn Lys Thr Arg Ala Leu Lys Asp Gly Asn Tyr Pro Val Val Phe Gln			
20	25	30	
Leu Ile His Gln Lys Arg Lys Lys Ile Ile Tyr Thr Lys Tyr Arg Met			
35	40	45	
Lys Glu Glu Asp Phe Ile Ile Ile Ala Gly Asn Val Val Ser Gly Cys			
50	55	60	

His Thr Gly Cys Lys Ile Ser Arg Glu Leu Leu Arg Ile Tyr Lys Gln
 65 70 75 80
 Leu Thr Ala Arg Val Arg Arg Leu Glu Ser Arg Gly Glu Glu Tyr Thr
 85 90 95
 Ile Asn Asp Ile Thr Thr Val Met Phe Ser Lys Val Thr Gly Lys Phe
 100 105 110
 Leu Leu Leu Pro Tyr Ile Asp Thr Gln Ile Glu Trp Lys Lys Ser Ile
 115 120 125
 Met Lys Asn Gly Thr Ala Ala Tyr Gln Ser Thr Tyr Ala Ser Leu
 130 135 140
 Ala Lys Tyr Ile Gly Lys Lys Glu Val Lys Ile Ser Gln Val Asn His
 145 150 155 160
 Arg Phe Val Thr Cys Tyr Arg Asp Phe Leu Ser Lys Asn Gly Ala Thr
 165 170 175
 Glu Asn Thr Ile Gly Tyr Tyr Leu Arg Asn Phe Arg Ala Leu Tyr Asn
 180 185 190
 Leu Ala Val Lys Asp Gly Leu Val Pro Pro Cys Asp Tyr Pro Phe Lys
 195 200 205
 Glu Ile Cys Thr Lys Pro Cys Lys Thr Val Lys Arg Ala Leu Asp Arg
 210 215 220
 Glu Gln Met Val Lys Leu Ala Cys Leu Ser Leu His Ser Asp Ala Glu
 225 230 235 240
 Leu Lys Arg Ser Leu Asp Leu Phe Leu Phe Gly Phe Tyr Ala Gln Gly
 245 250 255
 Met Ala Phe Val Asp Ile Ala Tyr Leu Lys Trp Lys Asn Ile Ser Gly
 260 265 270
 Asn Arg Ile Ile Tyr Arg Arg His Lys Ser Lys Gln Leu Ile Gln Ile
 275 280 285
 Val Ile Thr Pro Gln Ile Lys Ser Ile Ile Asp Glu His Gly Asn Asn
 290 295 300
 Thr Asn Asn Ala Glu Glu Tyr Val Phe Ser Val Ile Lys Asn Asn Ala
 305 310 315 320
 Asn Glu Tyr Thr Gln Tyr Arg Thr Ala Leu Gly Arg Thr Asn Arg His
 325 330 335
 Leu Lys Ile Ile Ser Ala Lys Leu Lys Ile Asp Pro Pro Leu Thr Thr
 340 345 350
 Tyr Thr Ala Arg His Thr Trp Ala Thr Leu Ala Arg Glu Tyr Gly Ala
 355 360 365
 Pro Val Ser Ala Ile Ser Ala Gly Leu Gly His Thr Lys Glu Glu Met
 370 375 380
 Thr Leu Val Tyr Leu Lys Glu Leu Asp Leu Ala Pro Leu His Arg Ile
 385 390 395 400
 Asn Lys Met Val Asn Asn Leu Leu Glu Arg Lys
 405 410

<210> 8752

<211> 65

<212> PRT

<213> B.fragilis

<400> 8752

Arg Ile Asn Met Ala Trp Met Val Thr Gln Lys Asn Ile Lys Ile His
 1 5 10 15
 Thr Cys Ile Asp Gly Ile Asp Ser Val Glu Asp Val Arg Val Val Ile
 20 25 30
 Ser His Lys Lys Leu Lys Ala Leu Gly Ala Lys Arg Arg Val Tyr Lys
 35 40 45
 Asp Thr Arg Glu Ser Phe Phe Leu Ile Glu Ser Asp Cys Glu Ile Ile
 50 55 60

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524
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<400> 8753

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			20					25					30		
His	Cys	Ile	Asp	Pro	Phe	Tyr	Ile	Ser	Pro	Thr	Met	Arg	Ala	Ile	Pro
		35					40					45			
Glu	Tyr	Thr	His	Trp	Ala	Ala	Ile	Tyr	Gly	Ser	Leu	Leu	Arg	Pro	Ser
	50					55					60				
Val	Pro	Leu	Phe	Val	Met	Met	Thr	Gly	Leu	Leu	Leu	Leu	Pro	Val	Lys
65				70						75				80	
Lys	Gln	Pro	Leu	Gly	Lys	Phe	Tyr	Lys	Lys	Arg	Ile	Tyr	Arg	Val	Leu
				85				90						95	
Phe	Pro	Phe	Leu	Ile	Trp	Ser	Val	Leu	Tyr	Ser	Met	Phe	Pro	Trp	Val
			100					105					110		
Thr	Gly	Val	Leu	Gly	Leu	Pro	Lys	Glu	Ile	Ile	Gly	Asp	Phe	Phe	Cys
		115					120					125			
Tyr	Thr	Gln	Gly	Gln	Glu	Ser	Gln	Ser	Leu	Ile	Asp	Ser	Leu	Lys	Asp
	130					135					140				
Val	Ala	Met	Ile	Pro	Phe	Asn	Phe	Ser	His	Lys	Glu	Asn	His	Met	Trp
145				150						155				160	
Tyr	Ile	Tyr	Leu	Leu	Ile	Gly	Leu	Tyr	Leu	Tyr	Met	Pro	Phe	Phe	Ser
				165				170						175	
Ala	Trp	Ile	Glu	Asn	Ala	Asp	Arg	Lys	Thr	Lys	Arg	Ala	Phe	Leu	Leu
			180					185					190		
Ile	Trp	Ile	Ile	Ser	Leu	Phe	Ile	Pro	Tyr	Leu	Lys	Glu	Tyr	Val	Ala
		195					200					205			
Asn	Cys	Leu	Phe	Glu	Arg	Ser	Gly	Tyr	Val	Phe	Gly	Thr	Asp	Thr	Trp
	210					215					220				
Asn	Glu	Phe	Gly	Leu	Phe	Tyr	Tyr	Phe	Ala	Gly	Phe	Asn	Gly	Tyr	Leu
225				230					235					240	
Leu	Leu	Gly	His	Tyr	Val	Lys	Lys	Gly	Asn	Asp	Trp	Ser	Leu	Met	Lys
				245				250						255	
Thr	Phe	Ile	Leu	Cys	Ile	Leu	Met	Phe	Ala	Val	Gly	Tyr	Tyr	Ile	Thr
		260						265					270		
Tyr	Thr	Gly	Phe	Ser	Thr	Thr	Ala	Ser	Asn	Pro	Asn	Ala	Thr	Glu	Thr
		275					280				285				
Glu	Met	Glu	Leu	Phe	Phe	Thr	Phe	Cys	Ser	Pro	Asn	Val	Leu	Leu	Met
	290					295					300				
Thr	Leu	Ala	Thr	Phe	Leu	Leu	Leu	Gln	Lys	Val	Val	Ile	Thr	Asn	Ser
305				310						315				320	
Thr	Val	Ile	Lys	Val	Leu	Ala	Asn	Met	Thr	Gln	Cys	Gly	Phe	Gly	Ile
				325				330						335	
Tyr	Met	Val	His	Tyr	Phe	Val	Val	Gly	Pro	Phe	Phe	Leu	Leu	Ile	Gly
			340					345					350		
Pro	Ser	Ser	Leu	Pro	Ile	Pro									

<210> 8754
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 <212> PRT
 <213> B.fragilis

<400> 8754

Glu	Met	Asn	Met	Ile	Lys	Arg	Ile	Leu	Val	Ala	Asn	Arg	Gly	Glu	Ile
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Ala	Val	Arg	Val	Met	Arg	Ser	Cys	Arg	Glu	Met	Glu	Ile	Thr	Ser	Ile
			20					25					30		
Ala	Val	Phe	Ser	Glu	Ala	Asp	Arg	Thr	Ala	Lys	His	Val	Leu	Tyr	Ala
		35				40						45			
Asp	Glu	Ala	Tyr	Cys	Ile	Gly	Pro	Ala	Ala	Ser	Lys	Glu	Ser	Tyr	Leu
	50					55					60				
Asn	Ile	Glu	Lys	Ile	Ile	Glu	Val	Ala	Lys	Ser	Cys	His	Ala	Asp	Ala
65					70					75				80	
Ile	His	Pro	Gly	Tyr	Gly	Phe	Leu	Ser	Glu	Asn	Ala	Thr	Phe	Ala	Arg
			85						90					95	
Arg	Cys	Arg	Glu	Glu	Gly	Ile	Thr	Phe	Ile	Gly	Pro	Asp	Pro	Glu	Thr
			100					105					110		
Met	Glu	Ala	Met	Gly	Asp	Lys	Ile	Ser	Ala	Arg	Ile	Lys	Met	Ile	Glu
			115				120						125		
Ala	Gly	Val	Pro	Val	Val	Pro	Gly	Thr	Gln	Asp	Asn	Leu	Lys	Ser	Val
	130					135					140				
Glu	Glu	Ala	Val	Glu	Leu	Cys	Asn	Gln	Ile	Gly	Tyr	Pro	Val	Met	Leu
145					150					155					160
Lys	Ala	Ser	Met	Gly	Gly	Gly	Gly	Lys	Gly	Met	Arg	Leu	Ile	His	His
				165					170					175	
Ala	Asp	Glu	Val	Ala	Glu	Ala	Tyr	Thr	Thr	Ala	Lys	Ser	Glu	Ser	Leu
			180					185					190		
Ser	Ser	Phe	Gly	Asp	Asp	Thr	Val	Tyr	Leu	Glu	Lys	Phe	Val	Glu	Glu
		195				200						205			
Pro	His	His	Ile	Glu	Phe	Gln	Ile	Leu	Gly	Asp	Lys	His	Gly	Asn	Val
	210					215					220				
Ile	His	Leu	Cys	Glu	Arg	Glu	Cys	Ser	Val	Gln	Arg	Arg	Asn	Gln	Lys
225					230					235					240
Ile	Val	Glu	Glu	Ser	Pro	Ser	Val	Phe	Ile	Thr	Pro	Glu	Leu	Arg	Arg
				245					250					255	
Asp	Met	Gly	Glu	Lys	Ala	Val	Ala	Ala	Lys	Ala	Val	Asn	Tyr	Ile	
			260					265					270		
Gly	Ala	Gly	Thr	Ile	Glu	Phe	Leu	Val	Asp	Lys	His	Arg	Asn	Tyr	Tyr
		275					280					285			
Phe	Leu	Glu	Met	Asn	Thr	Arg	Leu	Gln	Val	Glu	His	Pro	Ile	Thr	Glu
	290					295					300				
Glu	Val	Val	Gly	Val	Asp	Leu	Val	Lys	Glu	Gln	Ile	Lys	Val	Ala	Asp
305					310					315					320
Gly	Gln	Val	Leu	Gln	Leu	Arg	Gln	Glu	Asp	Ile	Gln	Gln	Arg	Gly	His
				325					330					335	
Ala	Ile	Glu	Cys	Arg	Ile	Cys	Ala	Glu	Asp	Thr	Glu	Met	Asn	Phe	Met
			340					345					350		
Pro	Ser	Pro	Gly	Val	Ile	Lys	Gln	Ile	Thr	Glu	Pro	Asn	Gly	Ile	Gly
		355				360						365			
Val	Arg	Ile	Asp	Ser	Tyr	Val	Tyr	Glu	Gly	Tyr	Glu	Ile	Pro	Ile	Tyr
	370					375					380				
Tyr	Asp	Pro	Met	Ile	Gly	Lys	Leu	Ile	Val	Trp	Ala	Thr	Thr	Arg	Glu
385					390					395					400
Tyr	Ala	Ile	Glu	Arg	Met	Arg	Arg	Val	Leu	His	Glu	Tyr	Lys	Leu	Thr
				405					410					415	

GenBank accession number: U00096.1 (B. fragilis strain 6305) (1988-1990)

Gly Val Lys Asn Asn Ile Ser Tyr Leu Arg Ala Ile Met Asp Thr Pro
 420 425 430
 Asp Phe Val Glu Gly His Tyr Asp Thr Gly Phe Ile Ala Lys Asn Gly
 435 440 445
 Glu Val Leu Gln Gln Cys Ile Thr Arg Thr Ser Glu Arg Ala Glu Asn
 450 455 460
 Ile Ala Leu Ile Ala Ala Tyr Met Asp Tyr Leu Met Asn Leu Glu Glu
 465 470 475 480
 Asn Asn Ser Gly Leu Ala Ala Asp Asn Arg Pro Ile Ser Lys Trp Lys
 485 490 495
 Glu Phe Gly Leu His Lys Gly Val Leu Arg Ile
 500 505

<210> 8755
 <211> 110
 <212> PRT
 <213> B.fragilis

<400> 8755

Ile Arg Asn Ile Ser Phe Lys Leu Thr Gly Asn Asn Thr Thr Trp Gln
 1 5 10 15
 Thr Leu Ser Tyr Leu Arg Cys Tyr Thr Ser Thr Tyr Lys Lys Gln Pro
 20 25 30
 Pro Met Ser Gln Glu Met Lys Ala Phe Pro Gly Met Lys Ala Ser Gln
 35 40 45
 Lys Leu Asn Phe Asn His Ser Glu Val Ile Ile Asn Ser Ala Pro Asp
 50 55 60
 Arg Lys Val Ile Leu Glu Ser Thr Leu Leu Glu Gln Ser Phe Val Glu
 65 70 75 80
 Lys Gly Cys Gly Glu Thr Thr Pro His Ala Trp Lys Thr Thr Ser Lys
 85 90 95
 Glu Ser Leu Lys Arg Pro Val Phe Asn Glu Ile Trp Tyr Thr
 100 105 110

<210> 8756
 <211> 462
 <212> PRT
 <213> B.fragilis

<400> 8756

Leu Ile Asp Met Asn Leu Ile Asn Asp Ile Leu Trp Thr Tyr Ile Leu
 1 5 10 15
 Ile Ala Met Leu Leu Gly Cys Ala Ile Trp Phe Thr Ile Lys Thr Arg
 20 25 30
 Phe Val Gln Phe Arg Met Ile Gly Glu Met Leu Arg Leu Leu Lys Asp
 35 40 45
 Ser Ala Gly Lys Glu Glu His Gly Glu Lys His Ile Ser Ser Phe Gln
 50 55 60
 Ala Phe Ala Ile Ser Leu Ala Ser Arg Val Gly Thr Gly Asn Leu Ala
 65 70 75 80
 Gly Val Ala Thr Ala Ile Ala Ile Gly Gly Pro Gly Ala Ile Phe Trp
 85 90 95
 Met Trp Ile Ile Ala Leu Leu Gly Ala Ser Ser Ala Phe Val Glu Ser
 100 105 110
 Thr Leu Ala Gln Leu Tyr Lys Glu Lys Gly Lys Glu Ser Phe Ile Gly
 115 120 125
 Gly Pro Ala Tyr Tyr Met Lys Lys Gly Leu Lys Lys Pro Trp Met Gly
 130 135 140
 Ile Leu Phe Ala Ile Leu Ile Thr Val Thr Phe Gly Phe Ala Phe Asn

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145          150          155          160
Ser Val Gln Ser Asn Thr Ile Cys Ala Ala Val Glu His Ala Phe Gly
          165          170          175
Ile Ser His Val Pro Met Gly Ile Ile Leu Thr Gly Leu Thr Leu Leu
          180          185          190
Ile Ile Phe Gly Gly Ile Gln Arg Ile Ala Lys Val Ser Ser Ile Ile
          195          200          205
Val Pro Val Met Ala Leu Gly Tyr Val Gly Leu Ala Leu Val Ile Val
          210          215          220
Leu Ile Asn Ile Thr His Leu Pro Asp Val Ile Gly Thr Ile Val Ser
225          230          235          240
His Ala Phe Gly Trp Gln Gln Ala Leu Gly Gly Gly Val Ala Ala Ala
          245          250          255
Leu Met Gln Gly Ile Lys Arg Gly Leu Phe Ser Asn Glu Ala Gly Met
          260          265          270
Gly Ser Ala Pro Asn Val Ala Ala Thr Ala Phe Val Ser His Pro Val
          275          280          285
Lys Gln Gly Leu Ile Gln Thr Leu Gly Val Phe Thr Asp Thr Leu Ile
          290          295          300
Ile Cys Ser Cys Thr Ala Phe Ile Ile Leu Phe Ser Gly Ala Pro Leu
305          310          315          320
Asp Gly Ser Thr Asn Gly Val Gln Leu Thr Gln His Ala Leu Asn Asn
          325          330          335
Glu Ile Gly Ser Ile Gly Gly Ile Phe Val Ala Val Ala Leu Phe Phe
          340          345          350
Phe Ala Phe Ser Ser Ile Ile Gly Asn Tyr Tyr Tyr Gly Glu Ala Asn
          355          360          365
Ile Arg Tyr Leu Thr His Lys Arg Trp Ile Val Tyr Leu Tyr Arg Leu
          370          375          380
Leu Val Gly Gly Met Val Trp Val Gly Ala Met Ser Thr Leu Asp Phe
385          390          395          400
Val Trp Gly Leu Ala Asp Ile Thr Met Gly Leu Met Ala Ile Cys Asn
          405          410          415
Leu Ile Ala Ile Ala Phe Leu Gly Lys Tyr Ala Phe Arg Leu Leu Gln
          420          425          430
Asp Tyr Arg Glu Gln Lys Lys Ser Gly Ile Lys Ser Pro Val Phe Thr
          435          440          445
Lys Asn Lys Met Lys Asp Ile Glu Lys Asp Ile Glu Cys Trp
          450          455          460

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<210> 8757

<211> 63

<212> PRT

<213> B.fragilis

<400> 8757

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Gln Thr Asp Ile Ala Ser Met Ala Asn His His Leu Asn Glu Glu Lys
1          5          10          15
Pro Ser Thr Lys Val Ser Gln Ser Leu Leu Leu Gly Asp Asn Phe Leu
          20          25          30
Ser Pro Glu Arg Lys Lys Phe Phe Thr Tyr Thr Thr Gln Ser Glu Thr
          35          40          45
Ile Glu Lys Gly Ile Asn Thr Ser Pro Ser Thr Gly Phe Phe His
          50          55          60

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<210> 8758

<211> 1255

<212> PRT

<213> B.fragilis

<400> 8758

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Ser Ile Cys Met Ile Asn Lys Ile Ile Arg Tyr Phe Leu Glu Asn Arg
1      5      10      15
Val Ile Thr Ile Leu Leu Leu Thr Leu Val Val Val Trp Gly Ile Ser
      20      25      30
Thr Ala Pro Phe Asn Trp His Gly Gly Ile Val Pro Arg Asn Pro Ile
      35      40      45
Pro Val Asp Ala Ile Pro Asp Ile Gly Asp Asn Gln Gln Ile Val Ala
      50      55      60
Thr Glu Trp Met Gly Arg Ser Pro Lys Asp Ile Gln Asp Gln Ile Thr
65      70      75      80
Tyr Pro Leu Thr Thr Ser Leu Leu Gly Ile Pro Gly Val Lys Thr Ile
      85      90      95
Arg Ser Ser Ser Met Phe Gly Met Ser Phe Ile Tyr Ile Ile Phe Glu
      100      105      110
Asp Asp Ile Glu Phe Tyr Trp Ser Arg Ser Arg Ile Leu Glu Lys Leu
      115      120      125
Asn Ser Leu Pro Pro Gly Thr Leu Pro Glu Asn Val Gln Pro Thr Leu
      130      135      140
Gly Pro Asp Ala Thr Ala Leu Gly Gln Ile Tyr Trp Tyr Thr Leu Glu
145      150      155      160
Gly Arg Asp Pro Lys Thr Gly Lys Pro Ala Gly Gly Trp Asn Ala Glu
      165      170      175
Glu Leu Arg Thr Ile Gln Asp Phe Tyr Val Lys Tyr Ser Leu Ser Ala
      180      185      190
Ala Glu Gly Val Ser Glu Val Ala Ser Ala Gly Gly Phe Ile Lys Glu
      195      200      205
Tyr Gln Ile Glu Leu Asn Pro Asp Ala Met Tyr Ser Phe Asn Val Ser
      210      215      220
Val Met Asp Val Met Asn Ala Val Lys Lys Ser Asn Leu Asp Ile Gly
225      230      235      240
Ala Glu Thr Met Glu Val Asn Lys Val Glu Tyr Leu Ile Arg Gly Leu
      245      250      255
Gly Tyr Val Lys Asn Val Ala Asp Ile Glu Asn Thr Val Val Thr Val
      260      265      270
Arg Glu Gly Val Pro Val Arg Ile Ser Asp Ile Ala Phe Val Asn Ile
      275      280      285
Gly Pro Gly Thr Arg Arg Gly Gly Leu Asp Lys Glu Gly Val Glu Ala
      290      295      300
Val Gly Gly Val Val Ile Ala Arg Tyr Gly Ser Asn Pro Leu Glu Val
305      310      315      320
Ile Asn Asn Val Lys Glu Lys Ile His Glu Met Asp Ala Gly Met Pro
      325      330      335
Gln Lys Thr Leu Ala Asp Gly Thr Val Ser Lys Val Thr Val Val Pro
      340      345      350
Phe Tyr Asp Arg Thr Gly Leu Ile Lys Glu Thr Ile Gly Thr Leu Glu
      355      360      365
Thr Ser Leu Ser His Glu Ile Leu Ile Cys Ile Ile Val Ile Ile Val
      370      375      380
Leu Val Leu Asn Leu Arg Ala Ser Val Val Ile Ala Ser Met Leu Pro
385      390      395      400
Ile Ala Val Leu Ala Thr Phe Ile Leu Met Arg Tyr Thr Gly Ile Glu
      405      410      415
Ala Asn Ile Val Ala Leu Ser Gly Ile Ala Ile Ala Ile Gly Val Met
      420      425      430
Val Asp Val Gly Val Val Phe Val Glu Ser Ile Ile Arg Tyr Met Glu
      435      440      445
Met Pro Glu Asn Lys Gly Ile Thr Arg Gly Lys Pro Phe Val Gly Leu

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450 455 460
 Ile Tyr Lys Ala Val Ser Glu Val Ser Gly Ala Ile Ala Thr Ala Met
 465 470 475 480
 Ile Thr Thr Ile Val Ser Phe Leu Pro Val Phe Ala Met Gln Ala Gln
 485 490 495
 Glu Gly Lys Met Phe Ser Pro Leu Ala Tyr Thr Lys Thr Tyr Ala Leu
 500 505 510
 Ala Ser Ala Phe Val Leu Gly Leu Ile Val Leu Pro Thr Leu Ala Tyr
 515 520 525
 Ile Leu Phe Ser Val Arg Ile Asp Ser Arg Leu Ile Arg Arg Val Met
 530 535 540
 Asn Cys Val Leu Ile Ala Ser Ala Ile Val Leu Phe Ala Val Tyr Asp
 545 550 555 560
 Ser Val Pro Ala Leu Gly Leu Thr Ala Val Gly Ile Asn Asn Leu Leu
 565 570 575
 Ala Tyr Arg Trp Lys Asn Pro Lys Thr Gly Asn Tyr Val Asn Ile Gly
 580 585 590
 Ile Ala Leu Thr Val Ala Val Phe Tyr Leu Ser Glu Glu Trp Leu Pro
 595 600 605
 Met Gly Pro Gln Arg Gly Leu Ser Val Asn Val Leu Ile Val Ala Gly
 610 615 620
 Cys Val Ala Ile Ile Leu Ala Leu Leu Trp Ile Leu Val Ile Phe Tyr
 625 630 635 640
 Glu Arg Ile Leu Arg Trp Cys Leu Ala Asn Arg Trp Lys Phe Met Met
 645 650 655
 Ile Pro Ala Ala Thr Val Val Cys Gly Phe Leu Ile Gly Arg Ser Ile
 660 665 670
 Gly Lys Glu Phe Met Pro Ser Leu Asn Glu Gly Ser Phe Leu Leu Met
 675 680 685
 Pro Thr Ser Met Pro His Thr Gly Ile Glu Gln Asn Leu Asp Tyr Val
 690 695 700
 Glu Lys Leu Asp Lys Arg Leu Ala Ala Ile Pro Glu Val Glu Thr Ala
 705 710 715 720
 Ile Gly Lys Trp Gly Arg Val Asn Ser Ala Leu Asp Pro Ala Pro Val
 725 730 735
 Gln Met Phe Glu Asn Thr Ile Asn Tyr Arg Pro Glu Tyr Ile Ile Gly
 740 745 750
 Glu Asp Gly Lys Arg Ala Arg Phe Arg Val Asn Tyr Asp Gly Ala Phe
 755 760 765
 Leu Leu Lys Gly Gly Gly Thr Tyr Asn Pro Ala Asn Gly Phe Arg Leu
 770 775 780
 Ile Pro Ala Asp Ser Leu Val Pro Asp Ser Arg Gly Asp Tyr Phe Arg
 785 790 795 800
 Gln Trp Arg Pro Glu Ile Lys Asn Ala Asn Asp Ile Trp Gln Gln Ile
 805 810 815
 Val Asn Val Thr His Leu Pro Gly Leu Thr Ser Ala Pro Lys Leu Gln
 820 825 830
 Pro Ile Glu Ala Arg Leu Val Met Leu Ser Thr Gly Met Arg Ala Pro
 835 840 845
 Met Gly Val Lys Val Tyr Gly Pro Thr Leu Glu Asp Ile Glu Gln Gly
 850 855 860
 Gly Lys Ala Ile Glu Gln Ala Leu Lys Ser Val Pro Ser Val Ile Pro
 865 870 875 880
 Ser Ser Val Phe Tyr Asp Arg Ala Val Gly Ala Pro Tyr Leu Glu Ile
 885 890 895
 Lys Leu Asn Arg Glu Ser Met Ala Arg Tyr Gly Val Ala Val Gly Asp
 900 905 910
 Leu Gln Glu Val Leu Ser Ala Ala Val Gly Gly Met Ala Leu Thr Arg
 915 920 925

450 455 460
 Ile Tyr Lys Ala Val Ser Glu Val Ser Gly Ala Ile Ala Thr Ala Met
 465 470 475 480
 Ile Thr Thr Ile Val Ser Phe Leu Pro Val Phe Ala Met Gln Ala Gln
 485 490 495
 Glu Gly Lys Met Phe Ser Pro Leu Ala Tyr Thr Lys Thr Tyr Ala Leu
 500 505 510
 Ala Ser Ala Phe Val Leu Gly Leu Ile Val Leu Pro Thr Leu Ala Tyr
 515 520 525
 Ile Leu Phe Ser Val Arg Ile Asp Ser Arg Leu Ile Arg Arg Val Met
 530 535 540
 Asn Cys Val Leu Ile Ala Ser Ala Ile Val Leu Phe Ala Val Tyr Asp
 545 550 555 560
 Ser Val Pro Ala Leu Gly Leu Thr Ala Val Gly Ile Asn Asn Leu Leu
 565 570 575
 Ala Tyr Arg Trp Lys Asn Pro Lys Thr Gly Asn Tyr Val Asn Ile Gly
 580 585 590
 Ile Ala Leu Thr Val Ala Val Phe Tyr Leu Ser Glu Glu Trp Leu Pro
 595 600 605
 Met Gly Pro Gln Arg Gly Leu Ser Val Asn Val Leu Ile Val Ala Gly
 610 615 620
 Cys Val Ala Ile Ile Leu Ala Leu Leu Trp Ile Leu Val Ile Phe Tyr
 625 630 635 640
 Glu Arg Ile Leu Arg Trp Cys Leu Ala Asn Arg Trp Lys Phe Met Met
 645 650 655
 Ile Pro Ala Ala Thr Val Val Cys Gly Phe Leu Ile Gly Arg Ser Ile
 660 665 670
 Gly Lys Glu Phe Met Pro Ser Leu Asn Glu Gly Ser Phe Leu Leu Met
 675 680 685
 Pro Thr Ser Met Pro His Thr Gly Ile Glu Gln Asn Leu Asp Tyr Val
 690 695 700
 Glu Lys Leu Asp Lys Arg Leu Ala Ala Ile Pro Glu Val Glu Thr Ala
 705 710 715 720
 Ile Gly Lys Trp Gly Arg Val Asn Ser Ala Leu Asp Pro Ala Pro Val
 725 730 735
 Gln Met Phe Glu Asn Thr Ile Asn Tyr Arg Pro Glu Tyr Ile Ile Gly
 740 745 750
 Glu Asp Gly Lys Arg Ala Arg Phe Arg Val Asn Tyr Asp Gly Ala Phe
 755 760 765
 Leu Leu Lys Gly Gly Gly Thr Tyr Asn Pro Ala Asn Gly Phe Arg Leu
 770 775 780
 Ile Pro Ala Asp Ser Leu Val Pro Asp Ser Arg Gly Asp Tyr Phe Arg
 785 790 795 800
 Gln Trp Arg Pro Glu Ile Lys Asn Ala Asn Asp Ile Trp Gln Gln Ile
 805 810 815
 Val Asn Val Thr His Leu Pro Gly Leu Thr Ser Ala Pro Lys Leu Gln
 820 825 830
 Pro Ile Glu Ala Arg Leu Val Met Leu Ser Thr Gly Met Arg Ala Pro
 835 840 845
 Met Gly Val Lys Val Tyr Gly Pro Thr Leu Glu Asp Ile Glu Gln Gly
 850 855 860
 Gly Lys Ala Ile Glu Gln Ala Leu Lys Ser Val Pro Ser Val Ile Pro
 865 870 875 880
 Ser Ser Val Phe Tyr Asp Arg Ala Val Gly Ala Pro Tyr Leu Glu Ile
 885 890 895
 Lys Leu Asn Arg Glu Ser Met Ala Arg Tyr Gly Val Ala Val Gly Asp
 900 905 910
 Leu Gln Glu Val Leu Ser Ala Ala Val Gly Gly Met Ala Leu Thr Arg
 915 920 925

Thr Val Glu Gly Arg Glu Arg Phe Pro Ile Arg Leu Arg Tyr Ala Arg
 930 935 940
 Glu Leu Arg Asp Ser Pro Glu Ala Leu Ser Met Leu Leu Val Pro Thr
 945 950 955 960
 Ala Thr Gly Ile Gln Val Pro Leu Lys Glu Leu Ala Asp Ile Glu Tyr
 965 970 975
 Ser Arg Gly Ala Gln Met Ile Gln Ser Glu Asn Thr Phe Leu Val Gly
 980 985 990
 Tyr Val Ile Phe Asp Lys Leu Ser Gly Arg Ala Glu Val Asp Val Val
 995 1000 1005
 Lys Glu Ala Ser Asn Leu Leu Glu Ala Lys Val Lys Ser Gly Glu Leu
 1010 1015 1020
 Leu Leu Pro Lys Gly Val Ser Tyr Lys Phe Ala Gly Asn Tyr Glu Gln
 1025 1030 1035 1040
 Gln Gln Arg Ala Thr Asp Arg Leu Met Ile Val Val Pro Leu Ala Leu
 1045 1050 1055
 Leu Ile Val Leu Leu Val Leu Tyr Phe Gln Phe Arg Thr Val Thr Ala
 1060 1065 1070
 Ser Leu Ile His Phe Ser Gly Val Phe Val Ala Phe Ala Gly Gly Phe
 1075 1080 1085
 Ile Leu Leu Trp Leu Tyr Gly Gln Pro Trp Phe Met Asn Phe Ser Ile
 1090 1095 1100
 Ala Gly Glu Asn Met Arg Asp Leu Phe Gln Met His Pro Ile Asn Leu
 1105 1110 1115 1120
 Ser Val Ala Val Trp Val Gly Phe Ile Ala Leu Phe Gly Val Ala Thr
 1125 1130 1135
 Asp Asp Gly Val Leu Met Gly Thr Tyr Ile His His Val Phe Leu Glu
 1140 1145 1150
 Arg Asp Pro Arg Thr Lys Tyr Asp Ile Arg Glu Ala Val Val Glu Ala
 1155 1160 1165
 Gly Leu Lys Arg Val Arg Pro Ala Ala Met Thr Thr Ala Thr Thr Leu
 1170 1175 1180
 Ile Ala Leu Leu Pro Val Leu Thr Ser Thr Gly Lys Gly Ala Asp Ile
 1185 1190 1195 1200
 Met Val Pro Met Ala Ile Pro Thr Phe Gly Gly Met Leu Ile Gln Ser
 1205 1210 1215
 Met Thr Met Phe Val Val Pro Val Leu Gln Cys Trp Trp Arg Glu Thr
 1220 1225 1230
 Val Glu Arg Arg Arg Glu Lys Lys Asn Gly Ser Glu Val Ser Glu Pro
 1235 1240 1245
 Val Thr Gly Ser Pro Gly Ile
 1250 1255

<210> 8759
 <211> 293
 <212> PRT
 <213> B.fragilis

<400> 8759
 Tyr Lys Cys Met Phe Ala Asn Lys Val Lys Lys Val Ala Ala Ile His
 1 5 10 15
 Asp Leu Ser Gly Met Gly Arg Val Ser Leu Thr Val Val Ile Pro Ile
 20 25 30
 Leu Ser Ser Met Gly Phe Gln Val Cys Pro Leu Pro Thr Ala Ile Leu
 35 40 45
 Ser Asn His Thr Gln Tyr Pro Asp Phe Thr Phe Leu Asp Leu Thr Asp
 50 55 60
 Glu Met Pro Arg Ile Ile Ala Glu Trp Lys Arg Leu Glu Val Glu Phe
 65 70 75 80

Asp Ala Ile Tyr Thr Gly Tyr Leu Gly Ser Pro Arg Gln Ile Gln Ile
 85 90 95
 Val Ser Asp Phe Ile Arg Asp Phe Arg Arg Lys Asp Ser Leu Thr Val
 100 105 110
 Ile Asp Pro Val Leu Gly Asp Asn Gly Lys Leu Tyr Ser Asn Phe Asn
 115 120 125
 Glu Ser Met Val Val Glu Met Gln His Leu Val Thr His Ala Asp Val
 130 135 140
 Ile Thr Pro Asn Leu Thr Glu Leu Phe Tyr Leu Leu Asp Arg Pro Tyr
 145 150 155 160
 Lys Glu Ser Asn Thr Asp Gln Glu Leu Lys Glu Tyr Leu Arg Cys Leu
 165 170 175
 Ser Asp Lys Gly Pro Glu Val Val Ile Ile Thr Ser Val Pro Val Leu
 180 185 190
 Asp Glu Pro His Lys Thr Ser Val Tyr Ala Tyr Asn Arg Thr Gly Asn
 195 200 205
 Arg Tyr Trp Lys Ile Thr Cys Pro Tyr Leu Pro Ala His Tyr Pro Gly
 210 215 220
 Thr Gly Asp Thr Phe Thr Ser Val Ile Thr Gly Ala Leu Leu Gln Gly
 225 230 235 240
 Asp Ser Leu Pro Ile Ala Leu Asp Arg Ala Thr Gln Phe Ile Leu Gln
 245 250 255
 Gly Ile Arg Ala Thr Phe Gly Tyr Glu Tyr Asp Asn Arg Glu Gly Ile
 260 265 270
 Leu Leu Glu Lys Val Leu His Asn Leu Asp Met Pro Ile Gln Ser Ser
 275 280 285
 Ser Tyr Glu Leu Ile
 290

<210> 8760

<211> 377

<212> PRT

<213> B.fragilis

<400> 8760

Lys Ala Ile Phe Ala Ser Glu Lys Ala Lys Ile His Leu Arg Ser Gln
 1 5 10 15
 Thr Ile Ala Gln Gln Pro Glu Pro Ala Ser Phe Ile Arg Ser Asp Met
 20 25 30
 Lys Arg Lys Leu Cys Leu Leu Leu Phe Phe Cys Leu Leu Leu Thr Ala
 35 40 45
 Pro Ala Leu Arg Ala Gln Gln Lys Ala Thr Pro Arg Ser Gly Glu Gly
 50 55 60
 Ile Ser Thr Phe Leu Leu Arg His Asn Arg Ala Pro Lys Lys Tyr Tyr
 65 70 75 80
 Asn Asp Phe Ile Glu Leu Asn Lys Ala Lys Leu Gly Lys Ser Arg Thr
 85 90 95
 Leu Lys Met Gly Val Thr Tyr Leu Ile Pro Pro Val Lys Lys Ala Ser
 100 105 110
 Ala Ala Thr Ser Gly Lys Thr Thr Glu Ala Ala Ala Glu Lys Thr Ser
 115 120 125
 Ala His His Pro Arg Arg Thr Glu Val Asn Glu Pro Leu Phe Gly Lys
 130 135 140
 Trp Leu Ser Asn Val Lys Val Thr Ser Asn Arg Leu Ala Gly Thr Cys
 145 150 155 160
 Phe Tyr Val Val Ser Gly His Gly Gly Pro Asp Pro Gly Ala Ile Gly
 165 170 175
 Arg Val Gly Lys His Glu Leu His Glu Asp Glu Tyr Ala Tyr Asp Ile
 180 185 190

Ala Leu Arg Leu Ala Arg Asn Leu Met Gln Glu Gly Ala Glu Val Arg
 195 200 205
 Ile Ile Ile Gln Asp Ala Lys Asp Gly Ile Arg Asp Glu Ala Tyr Leu
 210 215 220
 Ser Asn Ser Lys Arg Glu Thr Cys Met Gly Ser Pro Ile Pro Leu Asn
 225 230 235 240
 Gln Val Gln Arg Leu Gln Gln Arg Cys Asp Lys Ile Asn Ala Leu Tyr
 245 250 255
 Arg Lys Asp Arg Lys Lys Tyr Lys Tyr Cys Arg Ala Ile Phe Ile His
 260 265 270
 Val Asp Ser Arg Ser Lys Gly Thr Gln Thr Asp Val Phe Phe Tyr His
 275 280 285
 Ser Asn Arg Lys Ala Glu Ser Lys Arg Leu Ala Lys Asn Met Lys Glu
 290 295 300
 Thr Phe Glu Ser Lys Tyr Gly Lys His Gln Pro Asn Arg Gly Phe Ser
 305 310 315 320
 Gly Thr Val Ser Gly Arg Asn Leu Tyr Val Leu Ala His Thr Thr Pro
 325 330 335
 Ala Ser Val Phe Val Glu Leu Gly Asn Ile Gln Asn Thr Phe Asp Gln
 340 345 350
 Arg Arg Leu Val Ile Pro Ser Asn Arg Gln Ala Leu Ala Lys Trp Leu
 355 360 365
 Met Glu Gly Phe Ile Lys Asp Tyr Lys
 370 375

<210> 8761
 <211> 106
 <212> PRT
 <213> B.fragilis

<400> 8761
 Cys Leu Ile Met Val Leu Leu Leu Phe Phe Leu Tyr Asp Arg Lys Asn
 1 5 10 15
 His Ala Ile Ser Leu Asn Gly Tyr Tyr Ile Ile Gln Tyr Ile Pro Glu
 20 25 30
 His Ser Phe Ala Ile Val Arg Thr Arg Thr Lys Ala Val His Tyr Arg
 35 40 45
 Thr Ile Thr Ser Gly Tyr Pro Trp Ile Leu Asn Arg Ser Phe Cys Lys
 50 55 60
 Lys Arg Tyr Ile Arg Asn Leu Ile Leu Asn Ile Glu Ser Asp Lys Phe
 65 70 75 80
 Ile Gly Arg Ile Gln Trp Lys Asn Pro Val Asp Gly Asp Val Phe Ile
 85 90 95
 Pro Phe Ser Ile Val Ser Leu Cys Val Val
 100 105

<210> 8762
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 8762
 Thr Ser Val Ile Ser Ser Leu Val Cys Pro Asn Pro Ala Leu Ile Ala
 1 5 10 15
 Glu Thr Gly Ala Pro Tyr Ser Leu Ala Ser Val Ala His Val Trp Arg
 20 25 30
 Ala Val Tyr Val Val Asn Gly Gly Ser Ile Phe Ser Phe Ala Glu Ile
 35 40 45
 Ile Phe Lys Cys Leu Leu Val Arg Pro Lys Ala Val Arg Tyr

50

55

60

<210> 8763
 <211> 348
 <212> PRT
 <213> B.fragilis

<400> 8763

Arg Met Asn Ile Leu Phe Gly Leu Ile Leu Leu Val Ile Phe Thr Pro
 1 5 10 15
 Leu Ile Asn Ile Ile Ile Val Met Lys His Ile Ser Ile Asn Tyr Ile
 20 25 30
 Leu Thr Thr Ala Leu Ala Leu Gly Ile Gly Ile Ser Ile Pro Val Leu
 35 40 45
 Ile Gly Ser Thr Cys Leu Ser Glu Gln His Ser Val Gln Ser Glu Val
 50 55 60
 Pro Tyr Cys Val Thr Pro Pro Thr Val Pro Glu Gln Ala Val Phe Asp
 65 70 75 80
 Gly Asp Thr Ile Asp Leu Arg Arg Tyr Asp Arg Arg Glu Arg Met Asp
 85 90 95
 Arg Glu Leu Met Ser Phe Ile Tyr Met His Ser Ser Thr Met Gln Met
 100 105 110
 Ile Lys Arg Ala Asn Arg Tyr Phe Pro Val Ile Glu Pro Leu Leu Lys
 115 120 125
 Ala Asn Gly Ile Pro Asp Asp Phe Lys Tyr Leu Met Val Ile Glu Ser
 130 135 140
 Asn Leu Asn Pro Ile Ala Arg Ser Pro Ala Gly Ala Ala Gly Leu Trp
 145 150 155 160
 Gln Phe Met Pro Val Thr Ala Arg Glu Phe Gly Leu Glu Val Asn Asp
 165 170 175
 Asn Val Asp Glu Arg Tyr His Ile Glu Lys Ala Thr Ala Ala Ala Cys
 180 185 190
 Arg Tyr Phe Lys Gln Ala Tyr Ala Lys Tyr Gly Asp Trp Met Ala Val
 195 200 205
 Ser Ala Ser Tyr Asn Ala Gly Gln Gly Arg Ile Ser Ser Gln Leu Asp
 210 215 220
 Lys Gln Leu Ala Asp His Ala Met Asp Leu Trp Leu Ala Glu Glu Thr
 225 230 235 240
 Ser Arg Tyr Met Phe Arg Leu Leu Ala Val Lys Glu Val Phe Gly Asn
 245 250 255
 Pro Gln Arg Phe Gly Phe Leu Leu Lys Arg Glu His Leu Tyr Pro Ala
 260 265 270
 Ile Pro Tyr Lys Glu Val Ala Val Asp Thr Glu Ile Ser Asp Leu Ser
 275 280 285
 Asn Phe Ala Gln Lys Gln Gly Ile Thr Tyr Ala Gln Leu Arg Asp Ala
 290 295 300
 Asn Pro Trp Leu Arg Gly Ser Ser Leu Lys Asn Lys Thr Gly Lys Lys
 305 310 315 320
 Tyr Val Leu His Ile Pro Thr Gln Glu Gly Met Asn Tyr Asp Pro Arg
 325 330 335
 Lys Thr Val Pro His Glu His Lys Trp Val Ile Asp
 340 345

<210> 8764
 <211> 197
 <212> PRT
 <213> B.fragilis

<400> 8764

Thr Met Asp Ile Glu Ile Glu Asn His Pro Leu Glu Pro Phe Leu Pro
 1 5 10 15
 Ala Asn Ala Arg Leu Leu Met Leu Gly Ser Phe Pro Pro Gln Lys Lys
 20 25 30
 Arg Trp Ser Met Asp Phe Tyr Tyr Pro Asn Leu Asn Asn Asp Met Trp
 35 40 45
 Arg Ile Val Gly Leu Leu Phe Phe Asn Asn Lys Asp Tyr Phe Leu Asn
 50 55 60
 Glu Thr Arg Lys Ala Phe Cys Arg Glu Arg Ile Ile Ser Phe Leu Asn
 65 70 75 80
 Asp Lys Gly Ile Ala Leu Phe Asp Thr Ala Ser Ala Ile Arg Arg Leu
 85 90 95
 Gln Asp Asn Ala Ser Asp Lys Phe Leu Glu Val Val Gln Pro Thr Asp
 100 105 110
 Ile Ser Arg Leu Leu Gly Gln Leu Pro Glu Cys Lys Ala Ile Val Thr
 115 120 125
 Thr Gly Gln Lys Ala Thr Asp Thr Leu Arg Ala Gln Phe Glu Val Glu
 130 135 140
 Glu Pro Lys Val Gly Asp Phe Ser Glu Phe Val Phe Asp Gly Arg Pro
 145 150 155 160
 Met Arg Leu Tyr Arg Met Pro Ser Ser Ser Arg Ala Tyr Pro Leu Ala
 165 170 175
 Leu Asp Lys Lys Ala Ala Ala Tyr Arg Thr Met Tyr Gln Asp Leu Gln
 180 185 190
 Met Leu Asn Ile Glu
 195

<210> 8765

<211> 213

<212> PRT

<213> B.fragilis

<400> 8765

Leu Met Ser Ile Phe Ala Asn Leu Phe Lys Lys Gln Ala Asp Ala Asp
 1 5 10 15
 Ala Lys Val Val Gly Asn Val Glu Asp Phe Val Ser Leu Thr Arg Val
 20 25 30
 Tyr Phe Gln Ser Val Ile Ala Val Asn Leu Gly Ile Thr Asn Ile Arg
 35 40 45
 Phe Leu Pro Asp Val Ala Asn Phe Lys Arg Leu Phe Lys Val Ala Thr
 50 55 60
 Gln Gly Gly Lys Leu Gly Leu Ala Glu Lys Ser Ala Ser Arg Lys Met
 65 70 75 80
 Leu Met Gln Asp Tyr Gly Ile Ser Glu Ser Phe Phe Lys Glu Ile Asp
 85 90 95
 Thr Ser Ile Lys Lys Asn Cys Arg Thr Gln Asn Asp Val Gln Ala Tyr
 100 105 110
 Leu Phe Met Tyr Gln Gly Phe Ser Ser Asp Leu Met Met Leu Met Gly
 115 120 125
 Asn Leu Met Gln Trp Lys Phe Arg Met Pro Ala Ile Phe Lys Lys Ala
 130 135 140
 Leu Arg Ser Met Thr Glu Lys Thr Val His Asp Val Cys Thr Lys Thr
 145 150 155 160
 Val Trp Lys Ala Asp Asp Val His Lys Thr Ala Ala Ala Val Arg Gln
 165 170 175
 Tyr Lys Glu Arg Leu Gly Phe Ser Glu Gln Trp Met Ser Glu Tyr Val
 180 185 190
 Tyr Asn Ile Val Leu Leu Ala Lys Lys Glu Pro Lys His Lys Asp Glu
 195 200 205

Glu Ala Lys Ala Lys
210

<210> 8766
<211> 117
<212> PRT
<213> B.fragilis

<400> 8766
Pro Leu Ile Ile Ser Thr Thr Met Phe Thr Val Ile Lys Arg Met Glu
1 5 10 15
Ile Ser Ala Ala His Lys Leu Ile Leu Pro Tyr Arg Ser Lys Cys Ala
20 25 30
Ser Leu His Gly His Asn Trp Ile Ile Thr Val Tyr Cys Arg Ser Glu
35 40 45
Arg Leu Asn Ala Asp Gly Met Val Val Asp Phe Thr Gln Ile Lys Gln
50 55 60
Ala Val Lys Glu Lys Leu Asp His Arg Asn Leu Asn Glu Val Leu Pro
65 70 75 80
Phe Asn Pro Thr Ala Glu Asn Ile Ala Arg Trp Val Cys Lys Gln Ile
85 90 95
Pro Gln Cys Tyr Lys Val Glu Val Gln Glu Ser Glu Ala Asn Thr Val
100 105 110
Ile Tyr Glu Lys Asp
115

<210> 8767
<211> 551
<212> PRT
<213> B.fragilis

<400> 8767
Ile Ile Thr Phe Lys Lys Cys Asn Thr Met Lys Leu Asn Lys Val Lys
1 5 10 15
Asn Met Trp Arg Ile Leu Ser Val Ile Ala Leu Leu Gly Ser Thr Leu
20 25 30
Cys Thr Ser Cys Ile Ser Glu Asp Ile Asn Arg Asn Pro Leu Leu Pro
35 40 45
Thr Lys Glu Asp Glu Lys Met Asp Gly Val Ile Tyr Gly Ala Tyr Leu
50 55 60
Pro Asn Leu Glu Lys Ser Val Ile Pro Ile Gly Thr Ala Ser Glu Ser
65 70 75 80
Thr Glu Pro Val Asn Arg Tyr Gln Ile Gly Val Asn Leu Ala Gly Asp
85 90 95
Ala Trp Ala Gly Tyr Met Ser Pro Arg Asp Asn Lys Phe Asn Gly Ser
100 105 110
Lys Asn Phe Thr Asn Tyr Phe Met Tyr Glu Asn Trp Val Asn Tyr Val
115 120 125
Tyr Ser Phe Met Val Thr Asp Val Tyr Ser Pro Trp Met Gln Ile Lys
130 135 140
Arg Ile Ser Gln Asp Glu Gly Thr Arg Asn Asp Glu Ile Tyr Ala Leu
145 150 155 160
Ala Gln Ile Ile Lys Ile Ala Ala Leu His Arg Thr Thr Asp Met Phe
165 170 175
Gly Pro Ile Pro Tyr Ser Gln Val Gly Lys Gly Ser Phe Lys Val Ala
180 185 190
Tyr Asp Ser Gln Glu Ser Val Tyr Arg Ser Phe Leu Lys Glu Leu Glu
195 200 205
Glu Ala Val Gln Thr Leu Asp Asp Tyr Ser Asn Lys Ser Lys Glu Val

210	215	220
Leu Pro Ala Phe Asp Ile Val Tyr Asn Gly Asp Val Asn Lys Trp Met		
225	230	235
Arg Phe Ala Asn Ser Leu Met Leu Arg Leu Ala Ile Arg Val Arg Phe		240
	245	250
Ala Asp Ala Gly Leu Ala Lys Glu Tyr Ala Glu Lys Ala Glu Lys His		255
	260	265
Pro Ala Gly Leu Ile Asp Ser Lys Glu Leu Ala Ala His Met Gly Lys		270
	275	280
Gly Ala Gly Leu Gln Met Lys Asn Pro Leu Lys Val Ile Asn Glu Glu		285
	290	295
Tyr Asn Asp Thr Arg Met Gly Ala Thr Ile Tyr Ser Tyr Leu Ala Gly		300
305	310	315
Tyr Asn Asp Ala Arg Ala Ala Ile Tyr Phe Val Lys Asn Asn Gly Phe		320
	325	330
Lys Ala Val Arg Cys Gly Ile Ala Lys Ser Gly Asp Ala Tyr Asn Gly		335
	340	345
Phe Thr Arg Pro Asn Val His Glu Asp Asp Pro Leu Tyr Trp Met Lys		350
	355	360
Ala Ser Glu Val Cys Phe Leu Lys Ala Glu Gly Ala Leu Ala Gly Phe		365
	370	375
Asp Met Gly Gly Ser Ala Gly Asp Phe Tyr Asn Ala Gly Ile Arg Met		380
385	390	395
Ser Phe Ser Glu Asn Gly Leu Asp Asn Ser Ser Ala Glu Thr Tyr Leu		400
	405	410
Lys Asp Ser Thr Arg Lys Pro Ala Asn Tyr Thr Asp Thr Ser Asn Gly		415
	420	425
Glu Leu Ser Ala Asn Ala Pro Ser Ser Ile Thr Ile Arg Trp Glu Asn		430
	435	440
Gly Ala Thr Glu Glu Glu Lys Leu Glu Arg Ile Ile Thr Gln Lys Tyr		445
	450	455
Leu Ala Ile Phe Pro Asn Gly Gln Glu Ala Trp Thr Glu Trp Arg Arg		460
465	470	475
Thr Gly Tyr Pro Arg Gln Ile Val Val Ala Glu Asn Lys Thr Asn Ser		480
	485	490
Ala Val Leu Ile Gly Asn Gly Tyr Asp Leu Gly Gly Val Arg Arg Leu		495
	500	505
Pro Tyr Pro Arg Thr Glu Tyr Glu Gln Asn Gly Glu Asn Leu His Asn		510
	515	520
Ala Ile Ser Gln Tyr Leu Gly Gly Val Asp Asn Ala Ala Pro Lys Val		525
	530	535
Trp Trp Asp Lys Lys Ser Lys		540
545	550	

<210> 8768

<211> 226

<212> PRT

<213> B.fragilis

<400> 8768

Glu Glu Lys Met Glu Lys Arg Phe Met Gln Ser Val Ala Met Arg Ile		
1	5	10
Ile Tyr Lys Gly Val Phe His Trp Phe Leu Lys Leu Ile Val Gly Val		15
	20	25
Gln Phe Thr Asp Cys Gln Phe Leu Lys Lys Glu Lys Gln Phe Ile Ile		30
	35	40
Leu Ala Asn His Asn Ser His Leu Asp Thr Leu Ser Leu Leu Ser Ser		45
	50	55
Leu Pro Gly Asn Leu Leu Trp Lys Val Lys Pro Val Ala Ala Glu Asp		60

65 70 75 80
 Tyr Phe Gly Lys Thr Arg Phe Gln Ala Ser Ile Ser Asn Phe Phe Ile
 85 90 95
 Asn Thr Leu Leu Ile Arg Arg Lys Gly Glu Lys Asp Ser Glu His Asp
 100 105 110
 Pro Ile Arg Lys Met Leu Glu Ala Ile Asp Ala Gly Tyr Ser Leu Ile
 115 120 125
 Leu Phe Pro Glu Gly Thr Arg Gly Lys Ser Glu Gln Met Gly Lys Ile
 130 135 140
 Lys Ser Gly Ile Ala Arg Ile Leu Ser Leu Arg Pro Glu Val Lys Tyr
 145 150 155 160
 Ile Pro Val Phe Met Thr Gly Met Gly Arg Ser Leu Pro Lys Gly Lys
 165 170 175
 Met Ile Leu Leu Pro Tyr Lys Ala Ser Val Tyr Tyr Gly Ile Pro Thr
 180 185 190
 Leu Val Lys Ser Thr Asp Thr His Glu Ile Leu Asp Gln Ile Thr Gly
 195 200 205
 Asp Phe Glu Val Met Lys Glu Lys Tyr Gln Val Val Ile Asp Glu Glu
 210 215 220
 Glu Glu
 225

<210> 8769
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 8769
 Ser Phe Ser Val Phe Arg Cys Leu Tyr Ser Phe Ser Thr Arg Val Leu
 1 5 10 15
 Pro Tyr Arg Gln Pro Pro Phe Phe Ser Thr Leu Gln Arg Ser Val Phe
 20 25 30
 Gly Thr Val Arg Glu Met Ala Ile Gln Pro Asp Asn Leu Ala Ile Leu
 35 40 45
 Pro Asp Tyr Thr Lys Thr Ser Ile Phe Ile Pro Glu Arg Asp Arg Tyr
 50 55 60
 Arg Lys Lys Ala Gly Ala Gly Thr Pro Ile Tyr Ile
 65 70 75

<210> 8770
 <211> 532
 <212> PRT
 <213> B.fragilis

<400> 8770
 Val Ala Asp Phe Ser Ile Ser Asp Asp Leu Ala Ala Lys Val Thr Leu
 1 5 10 15
 Val Pro Ile Glu Gly Tyr Tyr Asp Lys Gly Lys Ser Arg Gln Asn Gln
 20 25 30
 Ala Glu Ala Gln Ala Val Val Asp Glu Ile Val Arg Arg Leu Ser Asp
 35 40 45
 Pro Glu Leu Arg Asn Gln Ser Ile Gly Val Val Thr Phe Ser Ser Val
 50 55 60
 Gln Gln Thr Leu Ile Glu Asp Met Leu Ser Asp Val Val Leu Gln Asn
 65 70 75 80
 Ala Glu Leu Glu Asn Leu Ala Phe Asn Arg Glu Glu Pro Val Phe Ile
 85 90 95
 Lys Asn Leu Glu Asn Val Gln Gly Asp Glu Arg Asp Val Ile Leu Phe
 100 105 110

Ser Val Gly Tyr Gly Pro Asp Val Asn Gly Arg Val Ser Leu Asn Phe
 115 120 125
 Gly Pro Leu Asn Arg Asp Gly Gly Glu Arg Arg Leu Asn Val Ala Val
 130 135 140
 Ser Arg Ala Arg Tyr Glu Met Lys Val Phe Ser Thr Leu Arg Ala Asp
 145 150 155 160
 Gln Ile Asp Leu Lys Lys Thr Ser Ser Ile Gly Val Ala Gly Leu Lys
 165 170 175
 Tyr Phe Leu Glu Tyr Ala Gly Lys Gly Thr Gly Val Leu Asn His Ser
 180 185 190
 Tyr Val Ala Val Ser Glu Glu Val Glu Met Gly Glu Leu Ile Ala Ala
 195 200 205
 Ala Leu Arg Glu Lys Gly His Gln Val Lys Thr Lys Ile Gly Cys Ser
 210 215 220
 Gly Phe Lys Val Asp Val Gly Ile Ile Asp Pro Asn Asp Thr Ser Arg
 225 230 235 240
 Tyr Met Leu Gly Ile Leu Cys Asp Gly Glu Asn Tyr Arg Ala Ala Lys
 245 250 255
 Thr Ala Arg Asp Arg Glu Ile Val Gln Asp Ser Val Leu Lys Met Leu
 260 265 270
 Gly Trp Asn Ile Cys Lys Val Trp Thr Leu Asp Trp Trp Glu Asp Ser
 275 280 285
 Gln Lys Val Ile Asp His Ile Glu Ala Glu Leu Lys Arg Ala Glu Cys
 290 295 300
 Gly Lys Ser Gln Arg Ser Val Pro Val Ile Ser Leu Ala Ser Gly Ser
 305 310 315 320
 Gly Glu Val Gln Lys Glu Gly Leu Leu Cys His Ala Gln His Cys Leu
 325 330 335
 Val Lys Leu Pro Glu Gln Val Ile Arg Glu Glu Val Lys Thr Ala Ser
 340 345 350
 Pro Glu Ile Tyr Glu Lys Thr Leu Leu Asn Ser Val Asn Val Ser Ala
 355 360 365
 Trp Glu Leu Met Met Pro Arg Arg Glu Pro Arg Ile Arg Lys Gln Leu
 370 375 380
 Asn Glu Ile Met Arg Thr Glu Ala Pro Ile Ser Arg Ser Leu Leu Ser
 385 390 395 400
 Ser Arg Ile Phe Asn Ala Tyr Gly Ile Leu Arg Lys Thr Ala Arg Leu
 405 410 415
 Ile Glu Trp Met Asp Gly Ile Leu Asp Lys Thr Pro Tyr Tyr Lys Gln
 420 425 430
 Glu Ile Asp Gly Leu Val Phe Tyr Trp Asn Thr Lys Glu Glu Ala Asp
 435 440 445
 Ser Tyr Thr Gly Phe Arg Ile Asp Ser Lys Arg Glu Ala Val Asp Leu
 450 455 460
 Pro Pro Arg Glu Val Ala Asn Ala Ala Arg Asn Ile Leu Glu Gln Gln
 465 470 475 480
 Val Ala Leu Pro Leu Val Asp Leu Met Arg Val Thr Ala Gln Leu Leu
 485 490 495
 Gly Tyr Ala Arg Phe Gly Leu Asn Val Glu Thr Ala Met Arg Arg Gly
 500 505 510
 Val Gln Ile Leu Leu Asp Gly Glu Glu Val Lys Ile Glu Gly Gly Lys
 515 520 525
 Ile Leu Met Lys
 530

<210> 8771

<211> 69

<212> PRT

<213> B.fragilis

<400> 8771

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Ile Asp Gly Val Leu Leu Lys Arg Glu Lys Ser Phe Leu Ser Asp Leu
1           5           10           15
Lys Ile Gly Ile Ser Ser Ser Ile Cys Val Arg Ala Ile Lys Val Ser
           20           25           30
Leu Phe Tyr Glu Lys Leu Val Asp Ile Ile Ile Leu Leu Leu Ser Ile
           35           40           45
Lys Val Gly Ile Pro Leu Val Asp Phe Cys Phe His Trp Leu Tyr Leu
           50           55           60
Arg Val Ser Lys Ile
65

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<210> 8772

<211> 614

<212> PRT

<213> B.fragilis

<400> 8772

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Asn Asn Glu Val Met Lys Thr Asn Gln Phe Arg Ala Met Val Phe Ala
1           5           10           15
Leu Leu Met Ala Val Ile Ser Leu Ala Thr Val Ser Ala Gln Ala Ile
           20           25           30
Thr Val Ser Gly Thr Val Thr Asp Ala Lys Asp Gly Thr Pro Leu Val
           35           40           45
Gly Cys Ser Val Gln Ile Lys Gly Thr Thr Lys Gly Thr Val Thr Asn
           50           55           60
Met Asn Gly Gln Tyr Thr Ile Gln Ser Lys Lys Gly Glu Thr Leu Leu
65           70           75           80
Phe Gln Tyr Ile Gly Tyr Lys Gln Glu Lys Arg Val Val Lys Ser Ser
           85           90           95
Thr Leu Asp Val Lys Met Lys Ala Asp Glu Leu Val Leu Glu Glu Cys
           100          105          110
Val Val Val Gly Tyr Gly His Glu Leu Arg Ala Thr Lys Ser Met Ser
           115          120          125
Thr Ala Tyr Met Ala Val Cys Pro Ala Ser Gly Ile Met Tyr Asn Ala
           130          135          140
Val Asn Ala Glu Glu Tyr Gly Glu Ile Gln Glu Asn Gly Phe Lys Asn
145          150          155          160
Val Ser Asp Ala Pro Leu Ser Thr Phe Ser Ile Asp Val Asp Ala Ala
           165          170          175
Ser Tyr Ser Asn Met Arg Arg Phe Ile Asn Lys Gly Lys Leu Pro Pro
           180          185          190
Val Asp Ala Ile Arg Thr Glu Glu Leu Val Asn Tyr Phe Ser Tyr Asp
           195          200          205
Tyr Pro Lys Pro Thr Gly Ser Asp Pro Val Lys Ile Thr Met Glu Ala
           210          215          220
Gly Thr Cys Pro Trp Asn Ala Asp His Arg Leu Val Arg Ile Gly Leu
225          230          235          240
Lys Ala Lys Glu Ile Pro Thr Asp Asn Leu Pro Ala Ser Asn Leu Val
           245          250          255
Phe Leu Ile Asp Val Ser Gly Ser Met Trp Gly Ala Asn Arg Leu Asp
           260          265          270
Leu Val Lys Ser Ser Leu Lys Leu Leu Val Asn Asn Leu Arg Asp Lys
           275          280          285
Asp Lys Val Ala Ile Val Thr Tyr Ala Gly Asn Ala Gly Val Lys Leu
           290          295          300
Glu Ala Thr Pro Gly Ser Asp Lys Gln Lys Ile Arg Glu Ala Ile Asp
305          310          315          320

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Glu Leu Glu Ala Ser Gly Ser Thr Ala Gly Gly Glu Gly Ile Met Leu
 325 330 335
 Ala Tyr Lys Ile Ala Gln Lys Asn Phe Ile Ser Gly Gly Asn Asn Arg
 340 345 350
 Ile Ile Leu Cys Thr Asp Gly Asp Phe Asn Val Gly Val Ser Ser Asp
 355 360 365
 Lys Glu Leu Glu Lys Leu Ile Glu Gln Lys Arg Lys Ser Gly Ile Phe
 370 375 380
 Leu Thr Val Leu Gly Tyr Gly Met Gly Asn Tyr Lys Asp Ser Lys Met
 385 390 395 400
 Gln Thr Leu Ala Glu Lys Gly Asn Gly Asn His Ala Tyr Ile Asp Asn
 405 410 415
 Leu Gln Glu Ala Asn Arg Val Leu Val Asn Glu Phe Gly Ala Thr Leu
 420 425 430
 His Thr Val Ala Lys Asp Val Lys Leu Gln Val Glu Phe Asn Pro Ala
 435 440 445
 Gln Val Gln Ala Tyr Arg Leu Ile Gly Tyr Glu Ser Arg Leu Leu Ala
 450 455 460
 Asp Glu Asp Phe Asn Asn Asp Thr Lys Asp Ala Gly Glu Met Gly Ala
 465 470 475 480
 Gly His Thr Val Thr Ala Phe Tyr Glu Val Ile Pro Thr Gly Val Lys
 485 490 495
 Ser Asp Phe Ala Gly Lys Ile Asp Asp Leu Lys Tyr Gln Lys Lys Gln
 500 505 510
 Lys Pro Ser Thr Pro Leu Asn Glu Ser Asp Glu Leu Leu Thr Ile Lys
 515 520 525
 Leu Arg Tyr Lys Ala Pro Asp Ser Asn Thr Ser Lys Lys Ile Glu Leu
 530 535 540
 Pro Leu Ile Asp His Lys Ser Asn Arg Val Ser Ala Asp Phe Arg Phe
 545 550 555 560
 Ala Ala Ala Val Ala Met Phe Gly Gln Leu Leu Arg Asp Ser Glu Phe
 565 570 575
 Lys Gly Asn Ala Thr Tyr Asp Lys Val Ile Ser Leu Ala Lys Thr Gly
 580 585 590
 Leu Glu Asn Asp Glu Lys Gly Tyr Lys Arg Glu Phe Ile Arg Leu Ala
 595 600 605
 Glu Thr Ala Lys Ser Leu
 610

<210> 8773

<211> 104

<212> PRT

<213> B.fragilis

<400> 8773

Lys Leu Leu Val Arg Asn Val Glu Phe Ile Lys Thr Arg Glu Arg Ala
 1 5 10 15
 Phe Phe Leu Leu Asn Pro Ile Val Lys Ser Ser Ser Lys Leu Glu Gly
 20 25 30
 Met Lys Lys Tyr Leu Ala Ile Glu Ile Arg Gly Glu Ile Phe Val Met
 35 40 45
 Asn Asp Asn Asp Glu Leu Gly Gly Leu Ile Asp Asn Asp Val Pro Phe
 50 55 60
 Thr Val Ile Gly His Val Cys Thr Glu Glu Cys Asn Thr Thr Cys Leu
 65 70 75 80
 His Tyr Arg Gln Gly Thr Cys Pro Cys Lys Ile Met Lys Asp Thr Phe
 85 90 95
 Gly Lys Val Ile His Val Phe Val
 100

<210> 8774
 <211> 191
 <212> PRT
 <213> B.fragilis

<400> 8774

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Met Leu Phe Phe Lys Arg Asn Ile Ser Arg Leu Ser Asp Glu Glu Leu
1      5      10      15
Leu Ile His Tyr Thr Lys Ser Gly Asp Thr Glu Tyr Phe Gly Glu Leu
20     25     30
Tyr Asn Arg Tyr Ile Pro Leu Leu Tyr Gly Leu Cys Leu Lys Tyr Leu
35     40     45
His Asp Glu Asp Arg Ala Gln Glu Ala Val Met Gln Leu Phe Glu Asp
50     55     60
Leu Leu Pro Lys Leu Gly Asn Tyr Glu Ile Lys Val Phe Lys Pro Trp
65     70     75     80
Leu Tyr Arg Val Ala Lys Asn His Cys Leu Gln Leu Leu Arg Lys Glu
85     90     95
Asn Lys Glu Ile Pro Leu Asp Tyr Thr Val Asn Ile Met Glu Ser Asp
100    105    110
Glu Phe Leu His Leu Leu Ser Glu Glu Ser Ser Glu Glu Gln Leu
115    120    125
Lys Ala Leu His His Cys Leu Glu Lys Leu Pro Glu Glu Gln Arg Thr
130    135    140
Ser Ile Thr Arg Phe Phe Leu Glu Glu Met Ser Tyr Ala Asp Ile Val
145    150    155    160
Glu Gln Thr Gly Phe Thr Leu Asn Asn Val Lys Ser Tyr Ile Gln Asn
165    170    175
Gly Lys Arg Asn Leu Lys Ile Cys Ile Lys Asn Gln Leu Lys Gly
180    185    190

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<210> 8775
 <211> 107
 <212> PRT
 <213> B.fragilis

<400> 8775

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Ser Ala Ser Ser Leu Asn Phe Phe Ser Thr Ile Asn Ala Tyr Phe Ile
1      5      10      15
Ala Ser Val Ser Ser Ala Pro Gly Leu Asn Leu Ala Thr Phe Phe Ala
20     25     30
Gly Ile Ser Ile Ala Phe Leu Val Glu Gly Leu Ile Pro Ile Leu Ala
35     40     45
Asp Leu Ser Ala Thr Glu Asn Val Pro Asn Pro Thr Lys Glu Ile Leu
50     55     60
Ser Pro Ala Asp Lys Ala Phe Val Thr Glu Glu Lys Lys Ala Ser Ser
65     70     75     80
Ala Phe Leu Glu Ser Thr Leu Leu Lys Pro Asp Ser Ala Ala Ile Ala
85     90     95
Leu Ile Ser Ser Ala Leu Phe Ile Ile Arg Lys
100    105

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<210> 8776
 <211> 577
 <212> PRT
 <213> B.fragilis

<400> 8776

Cys	Pro	Leu	Pro	Phe	Ser	Ser	Phe	Pro	Phe	Ser	Phe	Ser	Thr	Phe	Ala
1				5					10					15	
Ile	Asp	Leu	Phe	Ile	Asn	Thr	Gln	Thr	Met	Lys	Ser	Leu	His	Ser	Leu
			20					25					30		
Leu	Phe	Cys	Gly	Val	Leu	Leu	Leu	His	Ala	Ser	Cys	Ser	Gly	Ile	Lys
		35					40					45			
Thr	Ser	Asp	Glu	Lys	Ser	Leu	Gly	Asp	Cys	Pro	Leu	Val	Ala	Thr	Trp
	50					55					60				
Lys	Gln	Ala	Gly	Thr	Asp	Ser	Ile	Val	Val	Leu	Asp	Val	Gly	Leu	Ile
65					70					75					80
Lys	Asp	Thr	Met	Gln	Ile	Arg	Leu	Ser	Gln	Leu	Val	Asp	Asp	Leu	Glu
				85					90					95	
Ile	Ile	Lys	Leu	Glu	Thr	Arg	Asp	Thr	Ala	Leu	Val	Lys	Ser	Gly	Tyr
			100					105					110		
Met	Ala	Val	Ser	Asp	Arg	Tyr	Met	Leu	Leu	Gly	Ser	Tyr	Leu	Met	Pro
		115					120					125			
Cys	Lys	Leu	Phe	Asp	Lys	Asn	Gly	Thr	Phe	Leu	Arg	Gln	Ile	Gly	Gly
	130					135					140				
Leu	Gly	Gln	Gly	Pro	Gly	Glu	Tyr	Thr	Asn	Ile	Tyr	Asp	Ala	Gln	Ile
145					150					155					160
Asp	Glu	Val	Asn	Asn	Arg	Ile	Tyr	Met	Leu	Pro	Trp	Thr	Ser	Asn	Gln
			165						170					175	
Leu	Leu	Val	Phe	Asp	Leu	Asp	Gly	Asn	Ile	Leu	Pro	Pro	Ile	Pro	Leu
			180					185					190		
Pro	Ala	Arg	Val	Pro	Lys	Gly	Val	Phe	Arg	Val	Asp	Thr	Lys	Lys	Asn
		195					200					205			
Leu	Leu	Thr	Met	Gly	Ile	Leu	Pro	Phe	Gln	Asp	Leu	Glu	Asn	Lys	Phe
	210					215					220				
Val	Leu	Trp	Gln	Gln	Asp	Leu	Lys	Gly	Asn	Val	Leu	Gln	Ser	Ile	Ser
225					230					235					240
Ser	Thr	Pro	Tyr	Tyr	Thr	Tyr	Asp	Asp	Tyr	Ser	Asn	Glu	Val	Ser	Ser
				245					250					255	
Asn	Arg	Asn	Ala	Gly	Ser	Phe	Asp	Phe	Phe	Ile	Phe	Asn	Trp	Ser	Ala
			260					265					270		
Val	Gln	Asp	Ser	Leu	Tyr	His	Tyr	Asp	Ala	Lys	Glu	Asn	Arg	Leu	Val
	275						280					285			
Pro	Val	Phe	Thr	Ala	Asn	Phe	Gly	Thr	Gln	Asp	Ile	Pro	Lys	His	Thr
	290				295						300				
Tyr	Thr	Glu	Phe	Pro	Gly	His	Tyr	Trp	Val	Asn	Ile	Ile	Thr	Glu	Val
305					310					315					320
Val	Asn	Gly	Gln	Gly	Met	Pro	Pro	Met	Asn	Val	Leu	Ile	Asp	Lys	His
				325					330					335	
Ser	Leu	Lys	Gly	Thr	Tyr	Cys	Thr	Leu	Val	Ile	Asp	Glu	Leu	Gly	Gly
			340					345					350		
Ile	Pro	Val	Glu	Tyr	Pro	Tyr	Asp	Cys	Phe	Gln	Asp	Gly	Arg	Phe	Leu
		355					360					365			
Met	Asn	Leu	Asp	Pro	Gly	Asp	Leu	Ile	Asp	Glu	Leu	Glu	Lys	Val	Leu
	370					375					380				
Ala	Arg	Pro	Glu	Arg	Phe	Ser	Lys	Glu	Glu	Ser	Asp	Arg	Leu	Thr	Lys
385					390					395					400
Leu	Lys	Asn	Ser	Ile	Ser	Val	Asp	Asp	Asn	Asn	Tyr	Ile	Leu	Val	Gly
				405					410					415	
Lys	Phe	Lys	Ser	Lys	Gly	Glu	Ser	Leu	Ile	Leu	Ser	Ala	Asn	Pro	Val
			420					425					430		
Gln	Lys	Ile	Thr	Glu	Gln	Glu	Gln	Gln	Pro	Ala	Lys	Glu	Glu	Pro	Val
		435					440					445			
Lys	Thr	Ala	Val	Gln	Ser	Glu	Val	Ala	Ser	Glu	Ala	Asp	Thr	Val	Trp
	450					455					460				
Ser	Val	Ser	Pro	Tyr	Ser	Ala	Ile	Leu	Pro	Asp	Ala	Ile	Asp	Tyr	Phe

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465 470 475 480
 Arg Thr His Asn Lys Tyr Lys Asp Trp Asp Pro Lys Lys Gly Lys Arg
 485 490 495
 Val Leu Val Arg Gly Ile Ala Glu Lys Asp Gly Thr Ile Thr Gly Val
 500 505 510
 Gly Ile Ser Tyr Gly Trp Asp Leu Asp Pro Gln Ser Gly Ala Met Lys
 515 520 525
 Asn Lys Ser Glu Gly Thr Cys Gly Leu Lys Glu Leu Asp Glu Glu Ala
 530 535 540
 Leu Arg Leu Ile Arg Gln Ala Lys Leu Leu Pro Gly Met Thr Asp Lys
 545 550 555 560
 Lys Ile Pro Val Arg Ser Lys Phe Val Ile Val Val Asp Phe Pro Pro
 565 570 575
 Lys

<210> 8777
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 8777
 Leu Arg Pro Leu Arg Leu Phe Pro Lys Ala Arg Lys Gly Arg Ile Val
 1 5 10 15
 Leu Leu Phe Met Ile His Gln Pro Cys Lys Gln Lys Asp Arg Lys Lys
 20 25 30
 Thr Asp Pro Leu Thr Arg Leu Tyr Lys Lys Asn Ala Gln Pro Glu Ala
 35 40 45
 Glu Gln Glu Glu Asn Arg Val Ile Glu Gly Ser Lys Pro Gly Ile Lys
 50 55 60

<210> 8778
 <211> 161
 <212> PRT
 <213> B.fragilis

<400> 8778
 Leu Val Phe Thr Lys Arg Met Pro Asn Arg Arg Pro Asn Arg Lys Lys
 1 5 10 15
 Thr Gly Ser Leu Lys Gly Gln Ser Arg Gly Leu Ser Lys Asn Lys Ser
 20 25 30
 Gly Phe Asp Thr Lys Ser Leu Phe Val Phe Arg Lys Arg Ser Lys His
 35 40 45
 Phe Leu Gln Lys Thr Val Thr Phe Ser Lys Asn Ala Tyr Phe Phe Ala
 50 55 60
 Leu Thr Ser Pro Tyr Val Leu Lys Thr Thr Phe Thr Ala Pro Glu Asn
 65 70 75 80
 Thr Thr Tyr Ser Gly Ser Ser Cys Ser Asn Arg Leu Leu Ser Glu Ser
 85 90 95
 Pro Thr Gly Val Ser Lys Ser Leu Lys Phe Pro Ser Leu Lys Ser Thr
 100 105 110
 Gly Asn Ile Tyr Phe Gln Ile Ala Phe Phe Leu Thr Glu Asn Lys Ser
 115 120 125
 Arg Thr Lys Gln Asn Asp Lys Pro Gly Asn Glu Ile Glu Thr Phe Phe
 130 135 140
 Arg Pro Arg Leu Ser Arg Glu Ser Lys Lys Arg Lys Leu Gly Gly Phe
 145 150 155 160
 Ile

<210> 8779
 <211> 400
 <212> PRT
 <213> B.fragilis

<400> 8779

Gly	Ile	Asp	Thr	Leu	Leu	Met	Asn	Pro	Lys	Leu	Cys	Cys	Lys	Met	Thr
1				5					10					15	
Lys	Thr	Thr	Asn	Met	Lys	Gln	Asn	Thr	Phe	Phe	Val	Asn	Val	Trp	Thr
			20					25					30		
Leu	Met	Leu	Ile	Leu	Gly	Leu	Ile	Ala	Cys	Gly	Glu	Lys	Lys	Thr	Gln
			35				40					45			
Val	Lys	Thr	Glu	Leu	Gln	Arg	Ile	Glu	Ala	Phe	Ala	Phe	Asp	Val	Asn
	50				55						60				
Asp	Asp	Tyr	Leu	Gln	Ser	Tyr	Ala	Gly	Thr	Phe	Cys	Tyr	Ser	Thr	Ser
65					70					75					80
Ala	Arg	Ile	Asp	Gly	Lys	Glu	Cys	Leu	Ile	Val	Tyr	Asn	Gly	Lys	Leu
				85					90					95	
His	Ser	Ile	Asp	Ile	Leu	Asn	Leu	Ala	Asp	Arg	Arg	Pro	Leu	Lys	Gln
			100					105					110		
Ile	Ala	Leu	Ala	Lys	Asp	Gly	Pro	Asp	Gln	Ile	Leu	Ala	Pro	Lys	Gly
			115				120					125			
Ile	Gly	Tyr	Tyr	Lys	Asp	Ser	Phe	Ile	Ile	Leu	Asn	Thr	Gly	Gly	Leu
	130				135						140				
Tyr	Arg	Val	Gly	Gln	Asp	Gly	Lys	Val	Val	Ser	Lys	Lys	Leu	Leu	Asn
145					150					155					160
Asp	Phe	Pro	Gln	Ile	Lys	Glu	Glu	Gly	Tyr	Gly	Ile	Ala	Val	Pro	Asp
				165					170					175	
Leu	Thr	Val	Tyr	Phe	Ser	Val	Tyr	Ser	Phe	Phe	Gly	Phe	Asp	Ala	Ala
			180					185					190		
Asn	Gly	Arg	Val	Ala	Leu	Pro	Leu	Tyr	Phe	Tyr	Glu	Lys	Asp	Thr	Thr
			195				200					205			
Gly	Glu	Tyr	Pro	Lys	Lys	Val	Leu	Ile	Val	Ser	Cys	Asp	Asp	Trp	Asn
	210					215					220				
Ile	Arg	Asp	Glu	Val	Glu	Ile	His	Cys	Pro	Asp	Val	Ile	Arg	Lys	Glu
225					230					235					240
Gly	Asp	Met	Gln	Leu	Leu	Gly	Cys	Val	Asn	Val	Leu	Pro	Tyr	Gly	Asp
				245					250					255	
Trp	Leu	Ile	Tyr	Asn	Phe	Pro	Ala	Ser	Ser	Lys	Val	Tyr	Val	Tyr	Asp
			260					265					270		
Leu	Ser	Val	Lys	Lys	Ser	Lys	Glu	Tyr	Asp	Phe	Pro	Ser	Thr	Phe	Thr
		275					280					285			
Asp	Pro	Phe	Phe	His	Leu	Pro	Asp	Ile	Asn	Gly	Ser	Glu	Pro	Gly	Phe
	290					295					300				
Gly	Cys	Leu	Lys	Thr	Gly	Tyr	Tyr	Phe	Pro	Leu	Cys	Tyr	Asp	Ala	Tyr
305					310					315					320
His	Asn	Val	Phe	Trp	Arg	Ile	Gln	His	Gly	Pro	Leu	Asp	Gly	His	Gly
				325					330					335	
Val	Gly	Gly	Lys	Pro	Phe	Ser	Val	Met	Cys	Ile	Ser	Pro	Asp	Phe	Leu
			340					345					350		
Asn	Ser	Ala	Glu	Tyr	Val	Ile	Pro	Ala	Gly	Ala	Ser	Ile	Tyr	Pro	Asp
		355					360					365			
Leu	Ala	Phe	Thr	Asp	Ser	Leu	Ile	Leu	Leu	Pro	Tyr	Thr	Gly	Gly	Asp
	370					375					380				
Lys	Ile	Gly	Glu	Asn	Asn	Met	Cys	Phe	Tyr	Gly	Leu	Gln	Tyr	Arg	Glu
385				390						395					400

<210> 8780

<211> 107
 <212> PRT
 <213> B.fragilis

<400> 8780

Asn	Val	Tyr	Leu	Ile	Ile	Asp	Lys	Lys	Leu	Asn	Met	Lys	Lys	Ile	Asp
1			5						10					15	
Leu	Ile	Arg	Ser	Ile	Ala	Val	Lys	Ser	Asn	Leu	Lys	Lys	Glu	His	Ile
		20						25					30		
Ala	Ile	Val	Val	Glu	Gly	Val	Met	Glu	Ala	Ile	Ala	Glu	Ala	Leu	His
		35					40					45			
Gln	Gly	Glu	Ser	Val	Thr	Leu	Val	Gly	Phe	Gly	Thr	Phe	Glu	Val	Lys
	50					55					60				
Glu	Arg	Lys	Ala	Arg	Lys	Gly	Tyr	Asn	Leu	Ser	Thr	Gly	Glu	Ile	Met
65					70					75					80
Thr	Ile	Pro	Gly	Lys	Lys	Thr	Val	Arg	Phe	Lys	Pro	Gly	Ala	Lys	Met
				85					90					95	
Asn	Leu	Glu	Thr	Lys	His	Gln	Asp	Thr	Ser	Arg					
			100					105							

<210> 8781
 <211> 612
 <212> PRT
 <213> B.fragilis

<400> 8781

Arg	Leu	Leu	Phe	Leu	Tyr	Leu	Cys	Ala	Gln	Asn	Asn	Asn	Leu	Asp	Met
1			5						10					15	
Lys	Ile	Glu	Asp	Lys	Leu	Val	Thr	Ser	Val	Ile	Ser	Gly	Leu	Lys	Ala
			20					25					30		
Leu	Tyr	Gly	Gln	Asp	Val	Pro	Ala	Ala	Gln	Val	Gln	Leu	Gln	Lys	Thr
		35					40					45			
Lys	Lys	Glu	Phe	Glu	Gly	His	Leu	Thr	Leu	Val	Val	Phe	Pro	Phe	Leu
	50					55					60				
Lys	Met	Ser	Lys	Lys	Gly	Pro	Glu	Gln	Thr	Ala	Gln	Glu	Ile	Gly	Glu
65					70					75					80
Tyr	Leu	Lys	Ala	Asn	Glu	Pro	Ala	Val	Ala	Ala	Phe	Asn	Val	Ile	Lys
				85					90					95	
Gly	Phe	Leu	Asn	Leu	Thr	Val	Ala	Ser	Ala	Thr	Trp	Ile	Glu	Leu	Leu
			100				105						110		
Asn	Glu	Ile	His	Ala	Asp	Ala	Gln	Tyr	Gly	Ile	Val	Ser	Ala	Asp	Glu
		115					120					125			
Asn	Ala	Pro	Leu	Val	Met	Ile	Glu	Tyr	Ser	Ser	Pro	Asn	Thr	Asn	Lys
	130					135					140				
Pro	Leu	His	Leu	Gly	His	Val	Arg	Asn	Asn	Leu	Leu	Gly	Asn	Ala	Leu
145					150					155					160
Ala	Asn	Ile	Val	Met	Ala	Asn	Gly	Asn	Lys	Val	Val	Lys	Thr	Asn	Ile
				165					170					175	
Val	Asn	Asp	Arg	Gly	Ile	His	Ile	Cys	Lys	Ser	Met	Leu	Ala	Trp	Gln
			180					185					190		
Lys	Tyr	Gly	Lys	Gly	Glu	Thr	Pro	Glu	Ser	Ser	Gly	Lys	Lys	Gly	Asp
		195				200						205			
His	Leu	Val	Gly	Asp	Tyr	Tyr	Val	Ala	Phe	Asp	Lys	His	Tyr	Lys	Ala
	210					215					220				
Glu	Val	Ala	Glu	Leu	Met	Glu	Lys	Gly	Met	Ser	Lys	Glu	Glu	Ala	Glu
225					230					235					240
Ala	Ala	Ser	Pro	Leu	Met	Asn	Glu	Ala	Arg	Glu	Met	Leu	Val	Lys	Trp
				245					250					255	
Glu	Ala	Gly	Asp	Pro	Glu	Val	Arg	Ala	Leu	Trp	Gln	Met	Met	Asn	Asn

260 265 270
 Trp Val Tyr Ala Gly Phe Asp Glu Thr Tyr Arg Lys Met Gly Val Gly
 275 280 285
 Phe Asp Lys Ile Tyr Tyr Glu Ser Asn Thr Tyr Leu Glu Gly Lys Glu
 290 295 300
 Lys Val Met Glu Gly Leu Glu Lys Gly Phe Phe Phe Lys Lys Glu Asp
 305 310 315 320
 Gly Ser Val Trp Ala Asp Leu Thr Ala Glu Gly Leu Asp His Lys Leu
 325 330 335
 Leu Leu Arg Gly Asp Gly Thr Ser Val Tyr Met Thr Gln Asp Ile Gly
 340 345 350
 Thr Ala Lys Leu Arg Phe Ala Asp Tyr Pro Ile Asp Lys Met Ile Tyr
 355 360 365
 Val Val Gly Asn Glu Gln Asn Tyr His Phe Gln Val Leu Ser Ile Leu
 370 375 380
 Leu Asp Lys Leu Gly Phe Glu Trp Gly Lys Ser Leu Val His Phe Ser
 385 390 395 400
 Tyr Gly Met Val Glu Leu Pro Glu Gly Lys Met Lys Ser Arg Glu Gly
 405 410 415
 Thr Val Val Asp Ala Asp Asp Leu Met Ala Glu Met Ile Ala Thr Ala
 420 425 430
 Lys Glu Thr Ser Gln Glu Leu Gly Lys Leu Asp Gly Leu Thr Gln Glu
 435 440 445
 Glu Ala Asp Asp Ile Ala Arg Ile Val Gly Leu Gly Ala Leu Lys Tyr
 450 455 460
 Phe Ile Leu Lys Val Asp Ala Arg Lys Asn Met Thr Phe Asn Pro Lys
 465 470 475 480
 Glu Ser Ile Asp Phe Asn Gly Asn Thr Gly Pro Phe Ile Gln Tyr Thr
 485 490 495
 Tyr Ala Arg Ile Arg Ser Val Leu Arg Lys Ala Ala Glu Ala Gly Ile
 500 505 510
 Val Ile Pro Glu Val Leu Pro Ala Asn Ile Glu Leu Ser Glu Lys Glu
 515 520 525
 Glu Gly Leu Ile Gln Met Val Ala Asp Phe Ala Ala Val Val Arg Gln
 530 535 540
 Ala Gly Glu Asp Tyr Ser Pro Ser Gly Ile Ala Asn Tyr Val Tyr Asp
 545 550 555 560
 Leu Val Lys Glu Tyr Asn Gln Phe Tyr His Asp Phe Ser Ile Leu Arg
 565 570 575
 Glu Glu Asn Glu Asp Val Lys Leu Phe Arg Ile Ala Leu Ser Ala Asn
 580 585 590
 Ile Ala Lys Val Val Arg Leu Gly Met Gly Leu Leu Gly Ile Glu Val
 595 600 605
 Pro Asp Arg Met
 610

<210> 8782

<211> 450

<212> PRT

<213> B.fragilis

<400> 8782

Trp Gly Pro Tyr Ala Gln Thr Ile Asn Leu Asn Ser Ile Val Ala Met
 1 5 10 15
 Lys His Met Ser Leu Leu Leu Ile Gly Val Phe Val Leu Leu Gly Cys
 20 25 30
 Ser Ser Asn Lys Lys Gln Glu Pro Ile Ser Lys Ser Gly Ile Pro Val
 35 40 45
 Ile Asn Leu Ser Glu Asp Val Ser Thr Val Pro Ser Leu Leu Leu Ser

50	55	60
Glu Ala Ala Ser Lys Val Asp Ile Val Pro Leu Glu Val Thr Asp Glu		
65	70	75
Ser Leu Leu Gly Glu Ile Tyr His Leu Gln Ile Thr Glu Asn Asp Ile		80
	85	90
Trp Val His His Tyr Lys Asp Lys Cys Ile Cys Arg Phe Ser Arg Ser		95
	100	105
Gly Lys Phe Leu Asn Lys Val Gly Lys Ile Gly Gln Gly Pro Gly Glu		110
	115	120
Phe Ile Gln Leu Ser Asp Phe Phe Ile Asp Glu Lys His Arg Glu Ile		125
	130	135
Tyr Ile Val Ser Ala Ser Arg Gly Ile Phe Val Tyr Asp Phe Asp Gly		140
145	150	155
Asn Phe Lys Arg Gln Pro Thr Arg Thr Ile Val Glu Thr Met Phe Gly		160
	165	170
Ser Ile Phe Asn Gln Phe Met Ile Tyr Asn Asn His Phe Phe Ile Leu		175
	180	185
Gln Asn Leu Pro Leu Tyr Arg Glu Ile Pro Lys Asp Ser Leu Trp Ser		190
	195	200
Leu Ala Leu Val Asp Ser Ser Tyr Lys Lys Lys Lys Ile Phe Lys Asn		205
	210	215
Pro Val His Ile Gly Lys Glu Asp Gln Ile Ile Glu Asn Arg Ile Gln		220
225	230	235
Met Asn Tyr Met Phe Asn Tyr Trp Leu Glu Ser Ser Thr Asn Ile Asp		240
	245	250
Thr Tyr Asn Asn Gln Leu Thr Leu Lys Phe Pro Asp Thr Asp Thr Ile		255
	260	265
Tyr Ser Tyr Asp Ser Ile Lys Glu Glu Leu Val Pro Gln Tyr Ala Ile		270
	275	280
Trp Val Asp Glu Glu Lys Gly Asp Tyr Glu Tyr Thr His Leu Trp Phe		285
	290	295
Arg Asp Arg Lys Ala Phe Asp Tyr Phe Ser Ile His Ser Tyr Tyr Ser		300
305	310	315
Thr Lys Glu Asn Ile Tyr Leu Val Gly Ser Lys Gly Glu Glu Val Tyr		320
	325	330
Ile Tyr Cys Tyr Asn Lys Gln Glu Lys Asn Val Arg Leu Gln Lys Gln		335
	340	345
Gln Gly Glu Ile Thr Glu Arg Asp Val Ser Trp Phe Ser Ile Pro Phe		350
	355	360
Arg Arg Met Glu Cys Pro Phe Val Leu Ser Asn Asp Leu Cys Gly Gly		365
	370	375
Asp Phe Ile Ile Asp Phe Arg Ser Ser Gly Lys Tyr Trp Val Asp Val		380
385	390	395
Leu Tyr Leu Gly Asn Asp Gly Asn Arg Val Asp Leu Asn Gln Ile Lys		400
	405	410
Ser Ser Thr Val Ile Asp Glu Ser Lys Lys Lys Glu Leu Ile Gln Val		415
	420	425
Leu Glu Ser Ala Thr Glu Asp Ser Asn Pro Val Leu Met Ile Ala Thr		430
	435	440
Leu Lys		445
450		

<210> 8783

<211> 68

<212> PRT

<213> B.fragilis

<400> 8783

Thr Thr Val Tyr Lys His Asn Arg His Glu Ser His Asp Phe Asn Pro

1 5 10 15
 Lys Tyr Pro Asp Ser Tyr Lys Leu Val Ile Gln Val Asn Phe Thr Ile
 20 25 30
 Ile Pro Thr Phe Ala Leu Tyr Ile His Gln Tyr Asn Ala Asn Gly Ser
 35 40 45
 Ser Lys Asn Leu Leu Met Val His Ser Tyr Lys Arg Gln Tyr Leu Val
 50 55 60
 Tyr Thr Phe Phe
 65

<210> 8784

<211> 366

<212> PRT

<213> B.fragilis

<400> 8784

His Met Lys His Ile Gly Arg Leu Ala Leu Phe Leu Cys Leu Ala Val
 1 5 10 15
 Asn Ala Phe Phe Ile Gly Met Leu Leu Leu Thr Ala Tyr Ser Pro Tyr
 20 25 30
 Ile Asn Pro Glu Val His Pro Val Gln Ser Cys Leu Gly Leu Thr Phe
 35 40 45
 Pro Ile Phe Leu Val Ile Asn Phe Cys Phe Leu Ile Phe Trp Leu Ile
 50 55 60
 Val Arg Tyr Arg Phe Ala Leu Val Pro Leu Leu Gly Phe Leu Leu Cys
 65 70 75 80
 Tyr Pro Gln Leu Arg Thr Tyr Met Pro Val Asn Pro Gly Thr Ala Gly
 85 90 95
 Gln Pro Glu Asn Ser Ile Lys Leu Leu Ser Tyr Asn Ile Met Ser Phe
 100 105 110
 Gly Asn Met Lys Lys Glu Asn Gly Gln Asn Pro Ile Leu Asn Tyr Ile
 115 120 125
 Lys Asn Ser Asn Ala Asp Ile Val Cys Met Gln Glu Tyr Ala Gly Ser
 130 135 140
 Glu Thr Ala Lys Ile His Leu Ser Asn Lys Glu Ile Arg Gln Ala Leu
 145 150 155 160
 Lys Asp Tyr Pro Tyr His Asn Ile Lys Gln Val Gly Lys Thr Gly Ala
 165 170 175
 Gly Ser Gln Leu Ala Cys Tyr Ser Lys Phe Pro Ile Leu Ser Ala Arg
 180 185 190
 Met Leu Asp Tyr Arg Ser Asn Tyr Asn Gly Ser Met Val Tyr Glu Ile
 195 200 205
 Lys Ile Gly Lys Asp Thr Val Leu Leu Ile Asn Asn His Leu Glu Ser
 210 215 220
 Asn Lys Leu Thr Arg Glu Asp Lys Val Val Tyr Glu Asp Met Leu Lys
 225 230 235 240
 Asp Pro Lys Ala Gly Lys Val Lys Ser Gly Val Arg Gln Leu Val Asn
 245 250 255
 Lys Leu Ala Glu Ala Ser Ala Ile Arg Ser Ala Gln Ala Arg Thr Ile
 260 265 270
 Ala Gln Glu Ile Ala His Ser Pro Tyr Pro Ser Val Ile Val Cys Gly
 275 280 285
 Asp Phe Asn Asp Ser Pro Ile Ser Tyr Ala His Arg Val Ile Ser Gln
 290 295 300
 Asp Met Asp Asp Ala Phe Thr Glu Ser Gly Cys Gly Leu Gly Ile Ser
 305 310 315 320
 Tyr Asn Gln Asn Lys Phe Tyr Phe Arg Ile Asp Asn Ile Leu Val Ser
 325 330 335
 Lys Asn Leu Lys Ala Ser Gly Cys Thr Val Asp Asn Ser Ile Lys Asp

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<210> 8785
<211> 85
<212> PRT
<213> B.fragilis
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[illegible]

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<210> 8786
<211> 608
<212> PRT
<213> B.fragilis
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Glu	Leu	Asn	Lys	Gly	Ser	Asp	Met	Gln	Ala	Ile	Ile	Leu	Ala	Ala	Gly
1				5					10					15	
Met	Gly	Arg	Arg	Leu	Gly	Glu	Leu	Thr	Arg	Tyr	Asp	Thr	Lys	Cys	Met
		20						25					30		
Ile	Glu	Val	Asn	Gly	Ile	Arg	Ile	Ile	Asp	Arg	Leu	Leu	Ala	Asn	Leu
		35					40					45			
Ala	Val	Ala	Arg	Leu	Ser	Arg	Ile	Val	Leu	Val	Ile	Gly	Phe	Gln	Gly
	50					55					60				
Asp	Lys	Leu	Arg	Ala	Tyr	Leu	Gly	Asn	Glu	Tyr	Cys	Gly	Ile	Pro	Ile
65					70					75				80	
Tyr	Tyr	Leu	Glu	Asn	Pro	Tyr	Tyr	Ala	His	Thr	Asn	Asn	Ile	Tyr	Ser
				85					90					95	
Leu	Phe	Leu	Ala	Arg	His	His	Leu	Ala	Ser	Asp	Asp	Thr	Leu	Leu	Leu
			100					105					110		
Glu	Ser	Asp	Ile	Val	Phe	Glu	Lys	Arg	Ile	Leu	Glu	Arg	Val	Leu	Glu
		115					120					125			
Glu	Pro	Tyr	Pro	Asn	Val	Ala	Val	Val	Asp	Arg	Tyr	Lys	Ser	Trp	Met
		130				135					140				
Asp	Gly	Thr	Met	Val	Thr	Val	Asp	Glu	Lys	Gln	Phe	Ile	Val	Asp	Phe
145					150					155				160	
Val	Ser	Lys	His	Thr	Phe	Ser	Tyr	Glu	Lys	Thr	Ser	Thr	Tyr	Phe	Lys
				165						170				175	
Thr	Val	Asn	Ile	Tyr	Arg	Phe	Ser	Lys	Glu	Phe	Ser	Val	Gly	Lys	Tyr
			180					185					190		
Val	Pro	Phe	Leu	Glu	Ala	Tyr	Cys	Lys	Cys	Phe	Asp	Asn	Ser	Ala	Tyr
		195					200					205			
Tyr	Glu	Gln	Ile	Leu	Ala	Val	Leu	Ser	Leu	Leu	Asp	Lys	Ala	Gly	Leu
		210				215					220				
Lys	Ala	Leu	Pro	Leu	Glu	Gly	Glu	Lys	Trp	Tyr	Glu	Ile	Asp	Asp	Met
225					230					235					240

Gln Asp Leu Asp Ile Ala Glu Thr Leu Phe Gly Lys Lys Glu Gly Leu
 245 250 255
 Leu Pro Gly Tyr Gln Lys Arg Tyr Gly Gly Tyr Trp Arg Phe Pro Phe
 260 265 270
 Leu Leu Asp Phe Ala Tyr Leu Val Asn Pro His Phe Pro Thr Glu Arg
 275 280 285
 Met Leu Glu Glu Leu Lys Ala Asn Leu Asp Lys Leu Leu Arg Gln Tyr
 290 295 300
 Pro Ser Gly Ser Tyr Val Asn Arg Arg Leu Val Ala Lys His Trp Asn
 305 310 315 320
 Ile Pro Ala Glu Ala Val Ala Val Gly Asn Gly Ala Ala Glu Leu Ile
 325 330 335
 Arg Lys Leu Met Glu Leu Leu Pro Gly Arg Met Gly Val Ile Leu Pro
 340 345 350
 Thr Phe Glu Glu Tyr Leu Val Arg Asp Asp Arg Ile Glu Thr Phe Leu
 355 360 365
 Pro Leu Gly Pro Gly Tyr Arg Tyr Thr Val Ser Asp Leu Lys Ile Phe
 370 375 380
 Phe Glu Asp Lys Gly Val Thr Ser Leu Leu Leu Leu Asn Pro Asp Asn
 385 390 395 400
 Pro Ser Gly Asn Ser Ile Pro Tyr Glu Asp Leu Ile Ser Leu Ala Gly
 405 410 415
 Trp Thr Gln Glu Arg Ser Ile Arg Leu Ile Val Asp Glu Ser Phe Ile
 420 425 430
 Asp Phe Ser Glu Gly Gly Glu Glu Thr Ser Leu Ile Gly Asp Lys Ile
 435 440 445
 Leu Lys Glu Tyr Asn His Leu Val Val Ile Lys Ser Leu Ser Lys Ser
 450 455 460
 His Gly Ile Pro Gly Leu Arg Leu Gly Ile Ala Val Ser Gly Asp His
 465 470 475 480
 Lys Leu Met Asp Glu Leu Gln Gln Lys Leu Pro Val Trp Asn Ile Asn
 485 490 495
 Ser Leu Ala Glu Tyr Tyr Leu Gln Ile Leu Asp Lys Tyr Thr Ile Asp
 500 505 510
 Tyr Arg Gln Ala Cys Ala Arg Phe Arg Glu Glu Arg Thr Leu Phe Phe
 515 520 525
 Glu Glu Leu Gln Glu Val Gly Tyr Leu Ala Val Phe Pro Ser Gln Ala
 530 535 540
 Asn Phe Phe Leu Cys Glu Val Thr His Lys Tyr Ser Ala Arg Glu Leu
 545 550 555 560
 Ala Glu Val Leu Leu Arg Glu His Asp Ile Leu Val Lys Asp Cys Ser
 565 570 575
 Leu Lys Arg Gly Met Tyr Gly Lys Gln Tyr Ile Arg Ile Ala Ile Arg
 580 585 590
 Ser Lys Glu Glu Asn Arg Tyr Leu Ala Gly Ile Leu Lys Tyr Lys Leu
 595 600 605

<210> 8787

<211> 154

<212> PRT

<213> B.fragilis

<400> 8787

Lys Ser Leu Leu Arg Val Ile Ala Glu Glu Ala Phe Tyr Phe Leu Thr
 1 5 10 15
 Asp Leu Pro Phe Thr Glu Thr Arg Ser Asn Glu Lys Glu Ile Lys Gly
 20 25 30
 Arg Glu Cys Arg Cys Asn Leu Leu Asn Leu Pro His Gly His Leu Thr
 35 40 45

Lys Val Ile Thr Ser His Thr Lys Ser Lys Cys Ile Leu Ala Pro Pro
 50 55 60
 Gly Arg Met His Leu His Thr Asn Lys Thr Asn Asn Lys Pro Ile Cys
 65 70 75 80
 His Arg Trp Ala Leu Ala Leu Ile Arg Thr Phe Thr Ile Ser Pro Gly
 85 90 95
 Gly Ile Leu Met Leu Arg Leu Lys Ile His Leu Cys Thr Arg Phe Glu
 100 105 110
 Ser His Arg Leu Phe Ser Arg Asn Ser His Tyr Leu Ser Arg Arg Gln
 115 120 125
 Ile Ile Thr Phe Thr Gly Phe Ala Leu Phe Tyr Phe Lys Gly Ser Glu
 130 135 140
 Thr Tyr Gln Cys Asp Gly Phe Ser Leu Met
 145 150

<210> 8788
 <211> 1011
 <212> PRT
 <213> B.fragilis

<400> 8788

Ile Lys Ser Lys Met Gln Asn Lys Gly Phe Val Lys Val Phe Ala Val
 1 5 10 15
 Leu Leu Thr Leu Val Cys Val Phe Tyr Leu Ser Phe Ser Phe Val Thr
 20 25 30
 Arg His Tyr Thr Asn Lys Ala Lys Glu Phe Ala Lys Gly Asp Val Lys
 35 40 45
 Val Glu Gln Asp Tyr Leu Asp Ser Leu Ser Asn Glu Lys Val Trp Leu
 50 55 60
 Gly Asn Tyr Thr Leu Lys Gln Cys Arg Glu Met Glu Ile Ser Leu Gly
 65 70 75 80
 Leu Asp Leu Lys Gly Gly Met Asn Val Ile Leu Glu Val Ser Val Pro
 85 90 95
 Asp Val Ile Lys Ala Leu Ala Asp Asn Lys Pro Asp Glu Ala Phe Asn
 100 105 110
 Lys Ala Leu Ala Glu Ala Ala Lys Gln Ala Thr Thr Ser Gln Asp Asp
 115 120 125
 Val Ile Thr Leu Phe Ile Lys Glu Tyr His Lys Val Ala Pro Gly Ala
 130 135 140
 Lys Leu Ser Glu Leu Phe Ala Thr Gln Gln Leu Lys Asp Lys Val Asn
 145 150 155 160
 Gln Lys Ser Ser Asp Ala Glu Val Glu Lys Val Leu Arg Glu Glu Val
 165 170 175
 Lys Ala Ala Val Thr Asn Ser Tyr Asn Val Leu Arg Thr Arg Ile Asp
 180 185 190
 Arg Phe Gly Val Val Gln Pro Asn Ile Gln Ser Leu Glu Asp Lys Met
 195 200 205
 Gly Arg Ile Met Val Glu Leu Pro Gly Ile Lys Glu Pro Glu Arg Val
 210 215 220
 Arg Lys Leu Leu Gln Gly Ser Ala Asn Leu Glu Phe Trp Glu Thr Tyr
 225 230 235 240
 Asn Ala Lys Glu Val Ala Pro Tyr Leu Gln Ala Ala Asp Ser Lys Leu
 245 250 255
 Arg Ala Val Leu Ala His Glu Ala Thr Val Asn Asp Thr Val Ala Ala
 260 265 270
 Val Asp Ser Thr Ala Leu Ala Ala Ala Glu Ala Thr Pro Asp Lys Ala
 275 280 285
 Val Ser Ala Ala Asp Ser Leu Ala Ala Ala Leu Lys Gly Gly Glu Lys
 290 295 300

Lys Gln Gln Ala Ser Ser Ala Asp Leu Glu Gln Leu Lys Lys Glu His
 305 310 315 320
 Pro Leu Leu Ala Ile Leu Ser Val Asn Pro Asn Gly Gly Pro Val Val
 325 330 335
 Gly Tyr Ala Asn Tyr Lys Asp Thr Ala Thr Val Asn Ser Tyr Leu Ala
 340 345 350
 Met Lys Glu Val Ala Ala Glu Leu Pro Lys Asp Leu Arg Leu Lys Trp
 355 360 365
 Gly Val Ser Pro Phe Glu Tyr Asp Pro Lys Gly Gln Thr Phe Glu Leu
 370 375 380
 Tyr Ala Ile Lys Ser Thr Glu Arg Asn Gly Lys Ala Pro Leu Glu Gly
 385 390 395 400
 Asp Val Val Thr Asp Ala Lys Asp Asp Tyr Asp Gln Tyr Gly Lys Pro
 405 410 415
 Ser Val Ser Met Ser Met Asn Ser Asp Gly Ala Arg Arg Trp Ala Leu
 420 425 430
 Leu Thr Lys Gln Asn Ile Asn Lys Ser Ile Ala Ile Val Leu Asp Asn
 435 440 445
 Tyr Val Tyr Ser Ala Pro Asn Val Ser Asn Glu Ile Thr Gly Gly Asn
 450 455 460
 Ser Gln Ile Thr Gly His Phe Thr Pro Glu Gln Ala Lys Asp Leu Ala
 465 470 475 480
 Asn Val Leu Lys Ser Gly Lys Met Pro Ala Pro Ala His Ile Val Gln
 485 490 495
 Glu Asp Ile Val Gly Pro Ser Leu Gly Gln Glu Ser Ile Asn Ala Gly
 500 505 510
 Ile Phe Ser Phe Val Val Ala Leu Ile Leu Leu Met Ile Tyr Met Cys
 515 520 525
 Ser Met Tyr Gly Phe Ile Pro Gly Met Ile Ala Asn Gly Ala Leu Val
 530 535 540
 Leu Asn Phe Phe Phe Thr Leu Gly Ile Leu Ser Ser Phe Gln Ala Ala
 545 550 555 560
 Leu Thr Met Ser Gly Ile Ala Gly Met Val Leu Ser Leu Gly Met Ala
 565 570 575
 Val Asp Ala Asn Val Leu Ile Tyr Glu Arg Thr Lys Glu Glu Leu Arg
 580 585 590
 Ser Gly Lys Gly Val Lys Lys Ala Leu Ala Asp Gly Tyr Ser Asn Ala
 595 600 605
 Phe Ser Ala Ile Phe Asp Ser Asn Leu Thr Ser Ile Ile Thr Gly Ile
 610 615 620
 Ile Leu Phe Tyr Phe Gly Thr Gly Pro Ile Arg Gly Phe Ala Thr Thr
 625 630 635 640
 Leu Ile Ile Gly Ile Leu Cys Ser Phe Phe Thr Ala Val Phe Met Thr
 645 650 655
 Arg Leu Val Tyr Glu His Phe Met Ser Lys Asp Lys Leu Leu Asn Leu
 660 665 670
 Thr Phe Thr Ser Pro Ile Ser Lys Lys Met Leu Val Asn Thr His Phe
 675 680 685
 Asp Phe Met Gly Gly Asn Lys Lys Trp Leu Thr Ile Thr Gly Val Ile
 690 695 700
 Leu Leu Ile Cys Ile Gly Ser Leu Val Thr Arg Gly Leu Ser Gln Ser
 705 710 715 720
 Ile Asp Phe Thr Gly Gly Arg Asn Phe Lys Val Gln Phe Glu Asn Pro
 725 730 735
 Ile Glu Pro Glu Gln Val Arg Glu Leu Ile Ser Asn Lys Phe Gly Asp
 740 745 750
 Ala Asn Val Ser Val Ile Ser Ile Gly Thr Asp Lys Lys Thr Val Arg
 755 760 765
 Ile Ser Thr Asn Tyr Arg Ile Gln Asp Glu Gly Asn Asn Val Asp Ser

4872
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 4893
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 4900

770 775 780
 Glu Ile Glu Ser Tyr Leu Tyr Glu Ala Leu Lys Pro Met Leu Thr Gln
 785 790 795 800
 Asn Ile Thr Leu Ala Thr Phe Ile Asp Arg Asp Asn His Thr Gly Gly
 805 810 815
 Ser Ile Ile Ser Ser Gln Lys Val Gly Pro Ser Ile Ala Asp Asp Ile
 820 825 830
 Lys Thr Ser Ala Ile Trp Ser Val Val Phe Ala Leu Val Ala Ile Gly
 835 840 845
 Leu Tyr Ile Leu Ile Arg Phe Arg Asn Ile Ala Tyr Ser Ala Gly Ser
 850 855 860
 Val Ala Ala Leu Thr Ser Asp Thr Leu Met Ile Leu Gly Ala Tyr Ser
 865 870 875 880
 Leu Cys Trp Gly Trp Met Pro Phe Ser Leu Glu Ile Asp Gln Thr Phe
 885 890 895
 Ile Gly Ala Ile Leu Thr Ala Ile Gly Tyr Ser Ile Asn Asp Lys Val
 900 905 910
 Val Ile Phe Asp Arg Val Arg Glu Phe Phe Gly Leu Tyr Pro Lys Arg
 915 920 925
 Asn Val Lys Gln Leu Phe Asp Asp Ser Leu Asn Thr Thr Leu Ala Arg
 930 935 940
 Thr Ile Asn Thr Ser Leu Ser Thr Leu Ile Val Leu Leu Cys Ile Phe
 945 950 955 960
 Ile Leu Gly Gly Asp Ser Ile Arg Ser Phe Ala Phe Ala Met Ile Leu
 965 970 975
 Gly Val Val Ile Gly Thr Leu Ser Ser Leu Phe Val Ala Ser Pro Ile
 980 985 990
 Ala Tyr Met Met Leu Lys Asn Lys Lys Gly Ser Ala Pro Ala Thr Thr
 995 1000 1005
 Thr Glu Glu
 1010

<210> 8789
 <211> 82
 <212> PRT
 <213> B.fragilis

<400> 8789
 Ile Ser Pro Asn Arg Asp Ser Ser Val Thr Ser Asn Gly Thr Ile Ser
 1 5 10 15
 Thr Phe Glu Ala Ala Ser Leu Lys Arg Ser Glu Gly Thr Val Asp Thr
 20 25 30
 Ser Ser Glu Arg Leu Ile Thr Gly Ile Pro Asp Leu Asp Ile Gly Ser
 35 40 45
 Cys Phe Leu Leu Glu Leu His Pro Asn Asn Thr Asn Thr Pro Ile Ser
 50 55 60
 Asn Lys Asp Met Cys Phe Ile Ala Thr Ile Glu Leu Arg Phe Ile Val
 65 70 75 80
 Cys Ala

<210> 8790
 <211> 493
 <212> PRT
 <213> B.fragilis

<400> 8790
 Phe Glu Asn Lys Met Lys Ser Phe Thr Phe Phe Arg Thr Glu Glu Gly
 1 5 10 15

Asn Tyr Tyr Leu Tyr Asn Ser Arg Lys Ser Ser Leu Leu Asn Val His
 20 25 30
 Pro Val Ile Lys Val Ile Glu Ala Leu Asp Asn Asn Asp Gly Glu Glu
 35 40 45
 Thr Leu Phe Ala Lys Ile Met Asn Gln Asn Leu Glu Ile Gly Asp Asp
 50 55 60
 Glu Lys Arg Leu Leu Leu Asp Lys Tyr Leu Phe Leu Arg Asp Asn Gly
 65 70 75 80
 Phe Phe Glu Glu Ile Asn Glu Glu Asp Phe Ile Asp Gly Lys Ile Thr
 85 90 95
 Pro Glu Ile Val Glu Lys Gln Ile Ala Phe Ile Asp Asn Val Leu Phe
 100 105 110
 Gln Val Thr Gly Asn Cys Asn Leu Arg Cys Gln Tyr Cys Cys Tyr Gly
 115 120 125
 Asp Met Tyr Ser Asp Lys Val Glu Lys Lys Asn Leu Ser Phe Glu Thr
 130 135 140
 Val Glu Thr Val Leu Asn Tyr Leu Met Ser Leu Trp Thr Ser Asn Lys
 145 150 155 160
 Asn Leu Ser Tyr Glu His Pro Ile Arg Ile Gly Phe Tyr Gly Gly Glu
 165 170 175
 Pro Leu Val Asn Phe Ser Leu Ile Glu Lys Ile Val Ser Leu Cys Glu
 180 185 190
 Ser Ile Thr Glu Arg Thr Gly Leu Val Phe Ile Tyr Ser Met Thr Thr
 195 200 205
 Asn Ala Leu Leu Leu Asp Arg Tyr Lys Asp Phe Ile Val Arg His Asn
 210 215 220
 Phe Ser Leu Leu Ile Ser Met Asp Gly Asn Glu Ala His Asn Val Leu
 225 230 235 240
 Arg Ile Lys Pro Asp Gly Glu Gln Ser Phe Gln Thr Val Tyr Glu Asn
 245 250 255
 Val Lys Lys Leu Gln Gln Gln Tyr Pro Asp Tyr Phe Gln Asn Lys Val
 260 265 270
 Glu Phe Asn Ser Val Leu Asn Ser His Ser Ser Val Asp Asp Ile His
 275 280 285
 Asp Phe Ile Phe Asn Glu Phe Gly Lys Ile Pro Leu Ile Glu Thr Ile
 290 295 300
 Ser His Thr Ala Leu Ser Asp Glu Gln Lys Tyr Gln Glu Ile Ala Lys
 305 310 315 320
 Asp Tyr Lys Glu Ser Pro Glu Met Met Ile Lys Arg Lys Asp Arg Ser
 325 330 335
 Pro Val Tyr Lys Glu Leu Gly Phe Phe Phe Tyr Tyr Gln Leu Asp Asn
 340 345 350
 Ala Tyr Lys His Tyr Cys Glu Val Leu Tyr Gly Thr Ile Lys Gln Lys
 355 360 365
 Lys Arg Ile Pro Thr Gly Thr Cys Leu Pro Phe Phe Lys Lys Met Phe
 370 375 380
 Val Thr Ala Asp Asn Lys Leu Leu Thr Cys Glu Arg Ile Ser Leu His
 385 390 395 400
 His Val Leu Gly Thr Val Asp Asn Glu Val His Leu Asn Phe Gly Glu
 405 410 415
 Ile Ala Ser Ile Tyr Asn Ser Tyr Tyr Glu Lys Met Arg Ser Gln Cys
 420 425 430
 Arg Gly Cys Tyr Leu Ile Glu Asn Cys Gly Glu Cys Phe Leu Gln Phe
 435 440 445
 Pro Leu Lys Asn Gly Val Pro Val Cys His Val Lys Met Asn Glu Ile
 450 455 460
 Gln Tyr Gln His Tyr Leu Ser Glu Ile Phe Gly Val Leu Glu Lys Asn
 465 470 475 480
 Pro Ser Leu Phe Glu Glu Val Asn Lys Met Val Phe Ala

<210> 8791
 <211> 126
 <212> PRT
 <213> B.fragilis

<400> 8791
 Cys Asn Ser Asn Leu Leu Ala Met Asp Lys Ile Glu Phe Arg Glu Asp
 1 5 10 15
 Lys Ile Thr Phe Ser Tyr Lys Lys Ser Tyr Gly Glu Cys Leu Tyr Gln
 20 25 30
 Asp Leu Ile Ala Val Glu Tyr Ser Lys Pro Tyr Cys Ile Leu Gln Ile
 35 40 45
 Gly Gly Arg Asn Ser Ile Leu Phe Leu Ile Ser Leu Arg Val Ile Leu
 50 55 60
 Glu Lys Leu Pro Ala Asp Phe Leu Leu Ile Asn Arg Gly Ile Ile Val
 65 70 75 80
 Asn Lys Glu Arg Ile Val Asp Cys Val Leu Gln Asp Gly Ala Tyr His
 85 90 95
 Ile Lys Met Asp Asn Asn Lys Ile Tyr Arg Ile Ser Thr Arg Lys Leu
 100 105 110
 Ala Thr Val Lys Lys Tyr Phe Met Val Gln Asn Asp Thr Ile
 115 120 125

<210> 8792
 <211> 334
 <212> PRT
 <213> B.fragilis

<400> 8792
 Asn Lys Gln Asn Glu Gln Ser Met Lys Lys Val Ile Leu Ala Val Ala
 1 5 10 15
 Ser Ile Ala Leu Trp Ala Ser Cys Ile Glu Asp Glu Lys Asp Tyr Ser
 20 25 30
 Gln Ile Ile Glu Thr Arg Val Ala Asn Cys Glu Thr Ser Lys Asp Phe
 35 40 45
 Ser Val Pro Val Lys Glu Gly Tyr Thr Thr Phe Val Thr Ser Gly Glu
 50 55 60
 Asp Thr Leu Ala Met Ala Asn Glu Pro Ile Thr Ile Arg Ile Pro Lys
 65 70 75 80
 Asn Ala Thr Ile Ser Thr Arg Ala Glu Gly Asp Gly Ile Asn Ile Ser
 85 90 95
 Tyr Thr Ile Leu Asp Glu Gly Ser Glu Thr Thr Tyr Ala Lys Val Trp
 100 105 110
 Gln Ala Ile Met Phe Glu Asp Thr Gln Asn Gly Asp Tyr Asp Tyr Asn
 115 120 125
 Asp Leu Ile Ile His Val Lys Asn Thr Ala Ser Asn His Ala Tyr Gln
 130 135 140
 His Pro Ser Glu Thr Trp Gln Thr Ile Glu Ile Gln Pro Ile Ala Leu
 145 150 155 160
 Gly Ser Thr Lys Thr Ile Lys Leu Gly Cys Ile Leu Ser Asp Gly Ser
 165 170 175
 Thr His Met Ile Ser Asp Asp Val Arg Thr Asp Leu Phe Gly Gly Arg
 180 185 190
 Gln Gly Phe Ile Asn Thr Val Asn Asp Asn Asp Pro Ile Arg Tyr Lys
 195 200 205
 Leu Ala Ser Thr Asn Ile Lys Asn Tyr Ala Met Pro Lys Lys Glu Lys
 210 215 220

Thr Ser Ala Ala Trp Val Ala Trp Phe Ile Glu Val Asp Gly Lys Arg
 225 230 235 240
 Met Tyr Ala Ala Ser Ser Asp Ile Asp Tyr Lys Ser Tyr Asp Met Val
 245 250 255
 Asn Lys Glu Asn Met Pro Tyr Gly Leu Ala Val Ser Asn Asn Asn Gly
 260 265 270
 Thr Phe Ser Tyr Pro Gln Glu Lys Asn Ser Leu Phe Glu Thr Tyr Pro
 275 280 285
 Gly Phe Ser Asp Trp Ile Asn Gly Lys Val Ser Ser Ile Gly Ser Phe
 290 295 300
 Gln Lys Glu Leu Val Tyr Lys Tyr Cys Ser Gly Gly Ile Ile Gly Glu
 305 310 315 320
 Asp Gly Lys Ser His Lys Ile Trp Asp Tyr Leu Asp Leu Asn
 325 330

<210> 8793
 <211> 1003
 <212> PRT
 <213> B.fragilis

<400> 8793

Ile Met Lys Lys Lys Ile Ser Arg Leu Ile Cys Ala Val Ala Cys Cys
 1 5 10 15
 Val Pro Val Ala Leu Gln Ala Gln Thr Ser Glu Lys Ile Thr Ser Pro
 20 25 30
 Val Asn Leu Tyr Lys Glu Gly Lys Glu Leu Phe Leu Gln Lys Asn Tyr
 35 40 45
 Ala Ala Ala Met Pro Pro Leu Arg Thr Phe Val Arg Gln Lys Ala Asp
 50 55 60
 Val Asn Leu Lys Glu Glu Ala Glu Tyr Met Leu Val Cys Ser Ala Tyr
 65 70 75 80
 Glu Leu Lys Asp Arg Asn Ala Ile Ala Gln Leu Arg Asn Tyr Leu Asp
 85 90 95
 Thr Tyr Pro Asp Thr Pro His Ala Asn Arg Ile Tyr Ala Leu Ile Ala
 100 105 110
 Ser Ala Tyr Phe Tyr Gln Gly Asn Tyr Asp Glu Ala Leu Ala Leu Phe
 115 120 125
 Asn Ser Ser Arg Leu Asp Leu Glu Gly Asn Glu Glu Arg Asp Asp Met
 130 135 140
 Thr Tyr Gln Leu Ala Thr Cys Tyr Leu Lys Val Gly Asn Val Lys Glu
 145 150 155 160
 Ala Ala Ile Trp Phe Glu Thr Leu Lys Ala Ser Ser Pro Lys Tyr Ala
 165 170 175
 Asn Asp Cys Ser Tyr Tyr Ile Ser Tyr Ile Arg Tyr Thr Gln Lys Arg
 180 185 190
 Tyr Asp Glu Ala Leu Lys Gly Phe Leu Pro Leu Gln Asp Asp Ala Lys
 195 200 205
 Tyr Lys Ala Leu Val Pro Tyr Tyr Ile Ala Glu Ile Tyr Ala Val Lys
 210 215 220
 Lys Asn Tyr Asp Lys Ala Gln Ile Val Ala Gln Asn Tyr Leu Ser Ala
 225 230 235 240
 Tyr Pro Gln Asn Glu His Ala Ala Glu Met Tyr Arg Ile Leu Gly Asp
 245 250 255
 Ala Tyr Tyr His Phe Gly Asp Tyr His Lys Ala Val Ala Ser Phe Arg
 260 265 270
 Asn Tyr Leu Glu Lys Glu Asn Thr Pro Arg Arg Asp Ala Leu Tyr Met
 275 280 285
 Leu Gly Leu Ser Tyr Phe Gln Thr Gly Val Phe Ser Lys Ala Ala Glu
 290 295 300

Thr Leu Gly Glu Val Thr Thr Glu Ser Asp Ala Leu Thr Gln Asn Ala
 305 310 315 320
 Tyr Leu His Met Gly Leu Ala Tyr Leu His Leu Ala Glu Lys Asn Lys
 325 330 335
 Ala Arg Met Ala Phe Glu Gln Ala Ala Ala Ser Asn Ala Asn Leu Lys
 340 345 350
 Ile Lys Glu Gln Ala Ala Tyr Asn Tyr Ala Leu Cys Ile His Glu Thr
 355 360 365
 Ser Tyr Ser Ala Phe Gly Glu Ser Val Thr Val Phe Glu Lys Phe Leu
 370 375 380
 Asn Glu Phe Pro Asn Ser Glu Tyr Ala Glu Met Val Ser Ser Tyr Leu
 385 390 395 400
 Val Glu Val Tyr Met Asn Thr Arg Ser Tyr Glu Ala Ala Leu Lys Ser
 405 410 415
 Ile Asp Arg Ile Ala His Pro Gly Lys Arg Ile Leu Glu Ala Lys Gln
 420 425 430
 Arg Ile Leu Phe Gln Leu Gly Thr Gln Ala Phe Ala Asn Thr Gln Phe
 435 440 445
 Glu Gln Ala Ile Gly Tyr Phe Asp Arg Ser Leu Gly Leu Gly Gln Tyr
 450 455 460
 Asn Arg Gln Thr Lys Ala Asp Ala Leu Tyr Trp Arg Gly Glu Ala Tyr
 465 470 475 480
 Tyr Arg Leu Asn Arg Met Glu Glu Ala Lys Arg Asn Phe Thr Asp Tyr
 485 490 495
 Leu Gln Leu Thr Gln Gln Thr His Asn Glu Met Tyr Ala Leu Ala His
 500 505 510
 Tyr Asn Leu Gly Tyr Ile Ala Phe His Gln Lys Asp Tyr Thr Gln Ala
 515 520 525
 Gln Asn Trp Phe Arg Lys Tyr Ile Ser Leu Glu Lys Gly Glu Asn Lys
 530 535 540
 Thr Ala Leu Ala Asp Ala Tyr Asn Arg Ile Gly Asp Cys Tyr Leu Asp
 545 550 555 560
 Val Arg Asn Phe Asp Glu Ala Lys His Tyr Tyr Ser Gln Ala Glu Ala
 565 570 575
 Met Asn Thr Pro Ser Gly Asp Tyr Ser Phe Tyr Gln Leu Ala Leu Val
 580 585 590
 Ser Gly Leu Gln Lys Asp Tyr Ser Gly Lys Ile Thr Leu Leu Asn Arg
 595 600 605
 Leu Ala Gly Lys Tyr Pro Ala Ser Pro Tyr Ala Ile Ser Ala Leu Tyr
 610 615 620
 Glu Lys Gly Arg Ser Tyr Val Leu Met Asp Asn Asn Gln Gln Ala Ile
 625 630 635 640
 Ala Ser Phe Lys Glu Leu Leu Ala Lys Tyr Pro Glu Ser Pro Val Ser
 645 650 655
 Arg Lys Ala Ala Ala Glu Ile Gly Leu Leu Tyr Tyr Gln Asn Glu Asp
 660 665 670
 Tyr Asp Gln Ala Ile Asn Ala Tyr Lys Gln Val Val Gln Lys Tyr Pro
 675 680 685
 Gly Ser Asp Glu Ala Arg Leu Ala Met Arg Asp Leu Lys Ser Ile Tyr
 690 695 700
 Val Asp Met Asn Arg Ile Asp Glu Phe Ala Ala Leu Ala Ser Ala Met
 705 710 715 720
 Pro Gly Asn Ile Arg Phe Asp Ala Ser Glu Gln Asp Ser Leu Thr Tyr
 725 730 735
 Met Ala Ala Glu Lys Ile Tyr Ile Arg Gly Arg Val Glu Gln Ala Lys
 740 745 750
 Glu Ser Phe Gly Lys Tyr Leu Gln Thr Phe Pro Asp Gly Ala Phe Gly
 755 760 765
 Leu Asn Ala His His Tyr Leu Cys Leu Ile Gly Lys Glu Gln Lys Asn

770 775 780
 Tyr Asp Met Ile Leu Glu His Ser Gly Lys Leu Leu Glu Tyr Pro Asp
 785 790 795 800
 Asn Pro Phe Ser Glu Glu Ala Leu Ile Met Arg Ala Glu Val Gln Phe
 805 810 815
 Asn Lys Val Gln Phe Ala Asp Ala Leu Ala Ser Tyr Lys Met Leu Lys
 820 825 830
 Glu Lys Ala Thr Thr Ala Glu Arg Arg Leu Leu Ala Glu Thr Gly Met
 835 840 845
 Leu Arg Ala Ala Tyr Leu Leu Lys Asp Asp Thr Glu Thr Ile His Ala
 850 855 860
 Ala Thr Ala Leu Leu Ser Glu Ala Lys Leu Ser Pro Glu Leu Lys Asn
 865 870 875 880
 Glu Ala Leu Tyr Tyr Arg Ala Lys Ala Tyr Leu Asn Gln Lys Ala Asp
 885 890 895
 Lys Ala Ala Met Gly Asp Leu Lys Glu Leu Ala Lys Asp Thr Arg Asn
 900 905 910
 Leu Tyr Gly Ala Glu Ala Lys Phe Leu Val Ala Gln Glu Leu Tyr Asn
 915 920 925
 Ser Gln Asn Tyr Ala Ala Ala Glu Lys Glu Leu Leu Asn Phe Ile Asp
 930 935 940
 Gln Ser Thr Pro His Ala Tyr Trp Leu Ala Arg Gly Phe Ile Leu Leu
 945 950 955 960
 Ser Asp Val Tyr Val Ala Met Asp Lys Lys Leu Asp Ala Arg Gln Tyr
 965 970 975
 Leu Leu Ser Leu Gln Gln Asn Tyr His Ala Asp Asp Asp Ile Glu Ser
 980 985 990
 Met Ile Glu Ser Arg Leu Asn Asn Leu Asn Lys
 995 1000

<210> 8794
 <211> 801
 <212> PRT
 <213> B.fragilis

<400> 8794
 Gly Lys Glu Asn Val Phe Phe Tyr Phe Cys Gly Gln Phe Ile Cys Phe
 1 5 10 15
 Asn Ile Thr Asp Met Gln Lys Asn Leu Val Ile Val Glu Ser Pro Ala
 20 25 30
 Lys Ala Lys Thr Ile Glu Lys Phe Leu Gly Lys Asp Phe Lys Val Leu
 35 40 45
 Ser Ser Tyr Gly His Ile Arg Asp Leu Lys Lys Lys Glu Phe Ser Ile
 50 55 60
 Asp Ile Glu Lys Asn Phe Lys Pro Lys Tyr Glu Ile Pro Ala Glu Lys
 65 70 75 80
 Gln Glu Leu Val Asn Lys Leu Lys Glu Glu Ala Ser Lys Ala Glu Thr
 85 90 95
 Val Trp Leu Ala Ser Asp Glu Asp Arg Glu Gly Glu Ala Ile Ser Trp
 100 105 110
 His Leu Tyr Glu Val Leu Lys Leu Lys Pro Glu Asn Thr Lys Arg Ile
 115 120 125
 Val Phe His Glu Ile Thr Lys Thr Ala Ile Leu Lys Ala Ile Glu Gln
 130 135 140
 Pro Arg Asp Ile Asp Ile Asn Leu Val Asn Ala Gln Gln Ala Arg Arg
 145 150 155 160
 Ile Leu Asp Arg Ile Val Gly Phe Glu Leu Ser Pro Val Leu Trp Lys
 165 170 175
 Lys Val Lys Pro Ala Leu Ser Ala Gly Arg Val Gln Ser Val Ala Val

180 185 190
 Arg Leu Ile Val Glu Arg Glu Arg Glu Ile Gln Ala Phe Lys Ser Glu
 195 200 205
 Ala Ser Tyr Arg Val Thr Ala Val Phe Leu Val Pro Asp Ala Asp Gly
 210 215 220
 Lys Leu Val Glu Met Lys Ala Glu Leu Ala Arg Arg Leu Lys Thr Lys
 225 230 235 240
 Lys Glu Ala Gln Lys Phe Leu Glu Ser Cys Lys Ala Ala Thr Phe Ser
 245 250 255
 Ile Glu Asp Ile Val Thr Arg Pro Val Lys Lys Ser Pro Ala Ala Pro
 260 265 270
 Phe Thr Thr Ser Thr Leu Gln Gln Glu Ala Ala Arg Lys Leu Gly Phe
 275 280 285
 Thr Val Ala Gln Thr Met Met Val Ala Gln Lys Leu Tyr Glu Ser Gly
 290 295 300
 Leu Ile Thr Tyr Met Arg Thr Asp Ser Val Asn Leu Ser Glu Tyr Ala
 305 310 315 320
 Thr Glu Gly Ser Lys Val Ala Ile Ala Gln Met Met Gly Asp Gln Tyr
 325 330 335
 Val His Pro Arg His Phe Ala Thr Lys Thr Lys Gly Ala Gln Glu Ala
 340 345 350
 His Glu Ala Ile Arg Pro Thr Tyr Met Glu Asn Gln Thr Ile Glu Gly
 355 360 365
 Ser Ala Gln Glu Arg Lys Leu Tyr Asp Leu Val Trp Lys Arg Thr Ile
 370 375 380
 Ala Ser Gln Met Ala Asp Ala Glu Leu Glu Lys Thr Thr Ala Thr Ile
 385 390 395 400
 Gly Ile Ser Asn Gly Asn Asp Lys Phe Thr Ala Thr Gly Glu Val Ile
 405 410 415
 Lys Phe Asp Gly Phe Leu Arg Val Tyr Lys Glu Ser Tyr Asp Asp Asp
 420 425 430
 Asn Glu Gln Glu Asp Glu Ser His Leu Leu Pro Pro Leu Lys Lys Gly
 435 440 445
 Gln Met Leu Glu His Gln Gly Ile Val Ala Thr Glu Arg Phe Thr Gln
 450 455 460
 Arg Pro Ser Arg Tyr Thr Glu Ala Ser Leu Val Arg Lys Leu Glu Glu
 465 470 475 480
 Leu Gly Ile Gly Arg Pro Ser Thr Tyr Ala Pro Thr Ile Ser Thr Ile
 485 490 495
 Gln Gln Arg Glu Tyr Val Glu Lys Gly Asp Lys Pro Gly Glu Glu Arg
 500 505 510
 Ser Phe Asp Ile Leu Thr Leu Lys Asp Asn Gln Ile Thr Asp Ile Lys
 515 520 525
 His Thr Glu Ile Val Gly Ala Glu Lys Ser Lys Leu Leu Pro Thr Asp
 530 535 540
 Ile Gly Thr Val Val Asn Asp Phe Leu Thr Glu Tyr Phe Pro Asn Ile
 545 550 555 560
 Leu Asp Tyr Asn Phe Thr Ala Asn Val Glu Lys Gln Phe Asp Glu Ile
 565 570 575
 Ala Glu Gly Asp Lys Lys Trp Thr Ser Ile Met Lys Asp Phe Tyr Lys
 580 585 590
 Asp Phe His Pro Ser Val Glu Thr Thr Leu Ala Thr Lys Thr Glu His
 595 600 605
 Lys Val Gly Glu Arg Ile Leu Gly Glu Glu Pro Lys Thr Gly Lys Pro
 610 615 620
 Val Ser Val Lys Ile Gly Arg Phe Gly Pro Val Val Gln Ile Gly Thr
 625 630 635 640
 Ala Asp Asp Thr Asp Lys Pro Arg Phe Ala Gln Met Lys Lys Gly Gln
 645 650 655

180 185 190
 Arg Leu Ile Val Glu Arg Glu Arg Glu Ile Gln Ala Phe Lys Ser Glu
 195 200 205
 Ala Ser Tyr Arg Val Thr Ala Val Phe Leu Val Pro Asp Ala Asp Gly
 210 215 220
 Lys Leu Val Glu Met Lys Ala Glu Leu Ala Arg Arg Leu Lys Thr Lys
 225 230 235 240
 Lys Glu Ala Gln Lys Phe Leu Glu Ser Cys Lys Ala Ala Thr Phe Ser
 245 250 255
 Ile Glu Asp Ile Val Thr Arg Pro Val Lys Lys Ser Pro Ala Ala Pro
 260 265 270
 Phe Thr Thr Ser Thr Leu Gln Gln Glu Ala Ala Arg Lys Leu Gly Phe
 275 280 285
 Thr Val Ala Gln Thr Met Met Val Ala Gln Lys Leu Tyr Glu Ser Gly
 290 295 300
 Leu Ile Thr Tyr Met Arg Thr Asp Ser Val Asn Leu Ser Glu Tyr Ala
 305 310 315 320
 Thr Glu Gly Ser Lys Val Ala Ile Ala Gln Met Met Gly Asp Gln Tyr
 325 330 335
 Val His Pro Arg His Phe Ala Thr Lys Thr Lys Gly Ala Gln Glu Ala
 340 345 350
 His Glu Ala Ile Arg Pro Thr Tyr Met Glu Asn Gln Thr Ile Glu Gly
 355 360 365
 Ser Ala Gln Glu Arg Lys Leu Tyr Asp Leu Val Trp Lys Arg Thr Ile
 370 375 380
 Ala Ser Gln Met Ala Asp Ala Glu Leu Glu Lys Thr Thr Ala Thr Ile
 385 390 395 400
 Gly Ile Ser Asn Gly Asn Asp Lys Phe Thr Ala Thr Gly Glu Val Ile
 405 410 415
 Lys Phe Asp Gly Phe Leu Arg Val Tyr Lys Glu Ser Tyr Asp Asp Asp
 420 425 430
 Asn Glu Gln Glu Asp Glu Ser His Leu Leu Pro Pro Leu Lys Lys Gly
 435 440 445
 Gln Met Leu Glu His Gln Gly Ile Val Ala Thr Glu Arg Phe Thr Gln
 450 455 460
 Arg Pro Ser Arg Tyr Thr Glu Ala Ser Leu Val Arg Lys Leu Glu Glu
 465 470 475 480
 Leu Gly Ile Gly Arg Pro Ser Thr Tyr Ala Pro Thr Ile Ser Thr Ile
 485 490 495
 Gln Gln Arg Glu Tyr Val Glu Lys Gly Asp Lys Pro Gly Glu Glu Arg
 500 505 510
 Ser Phe Asp Ile Leu Thr Leu Lys Asp Asn Gln Ile Thr Asp Ile Lys
 515 520 525
 His Thr Glu Ile Val Gly Ala Glu Lys Ser Lys Leu Leu Pro Thr Asp
 530 535 540
 Ile Gly Thr Val Val Asn Asp Phe Leu Thr Glu Tyr Phe Pro Asn Ile
 545 550 555 560
 Leu Asp Tyr Asn Phe Thr Ala Asn Val Glu Lys Gln Phe Asp Glu Ile
 565 570 575
 Ala Glu Gly Asp Lys Lys Trp Thr Ser Ile Met Lys Asp Phe Tyr Lys
 580 585 590
 Asp Phe His Pro Ser Val Glu Thr Thr Leu Ala Thr Lys Thr Glu His
 595 600 605
 Lys Val Gly Glu Arg Ile Leu Gly Glu Glu Pro Lys Thr Gly Lys Pro
 610 615 620
 Val Ser Val Lys Ile Gly Arg Phe Gly Pro Val Val Gln Ile Gly Thr
 625 630 635 640
 Ala Asp Asp Thr Asp Lys Pro Arg Phe Ala Gln Met Lys Lys Gly Gln
 645 650 655

Ser Met Glu Thr Ile Thr Leu Glu Glu Ala Leu Asp Leu Phe Lys Leu
660 665 670
Pro Arg Lys Val Gly Glu Phe Glu Asp Lys Thr Val Thr Ile Gly Thr
675 680 685
Gly Arg Phe Gly Pro Tyr Val Tyr His Asn Ser Lys Tyr Val Ser Leu
690 695 700
Pro Lys Thr Tyr Asp Pro Leu Glu Val Thr Leu Asp Glu Ala Ile Glu
705 710 715 720
Leu Ile Leu Ala Lys Arg Glu Ala Glu Ala Lys Lys His Ile Lys Lys
725 730 735
Phe Asp Glu Asp Ala Glu Met Glu Ile Leu Asn Gly Arg Tyr Gly Pro
740 745 750
Tyr Ile Ala Tyr Lys Gly Asn Asn Tyr Lys Ile Pro Lys Asp Val Val
755 760 765
Pro Val Asp Leu Asn Tyr Gln Thr Cys Leu Glu Ile Ile Lys Leu Gln
770 775 780
Ser Glu Lys Ala Glu Asn Ala Pro Lys Arg Gly Arg Tyr Ala Lys Lys
785 790 795 800
Lys

<210> 8795

<211> 569

<212> PRT

<213> B.fragilis

<400> 8795

Gln Ser Met Lys Tyr Asn Asn Tyr Ile Leu Leu Gly Ile Ala Phe Thr
1 5 10 15
Ala Leu Pro Val Ser Ile Gln Ala Gln Thr Gln Pro Lys Asp Thr Thr
20 25 30
Val Asn Arg Thr Val Ile Val Glu Gln Gln Tyr Asn Pro Asp Ile Met
35 40 45
Asp Ala Ala Lys Val Asn Val Leu Pro Lys Val Glu Glu Pro Ser Val
50 55 60
Ser Lys Lys Glu Val Glu Tyr Ala Thr Phe Thr Thr Pro Ala Thr Ser
65 70 75 80
Ile Pro Ala Gly Thr Ile Gly Ala Tyr Thr Gly Lys Glu Ile Gln Pro
85 90 95
Gly Phe Ile Pro Gly Tyr Val Arg Leu Gly Tyr Gly Asn Tyr Gly Asn
100 105 110
Leu Asp Val Leu Ala Asn Tyr Leu Phe Arg Leu Ser Asp Arg Asp Lys
115 120 125
Leu Asn Val Asn Phe Lys Met Asp Gly Met Asp Gly Thr Leu Asp Met
130 135 140
Pro Phe Gly Asp Thr Arg Lys Trp Asn Ala Phe Tyr Tyr Arg Thr Arg
145 150 155 160
Ala Asn Val Asp Tyr Val His Gln Phe Ala Lys Leu Asp Leu Asn Val
165 170 175
Ala Gly Asn Phe Gly Leu Ser Asn Phe Asn Tyr Glu Pro Tyr Gly Phe
180 185 190
Lys Lys Gln Lys Phe Thr Ser Gly Asp Val His Phe Gly Val Lys Ser
195 200 205
Thr Asp Glu Thr Leu Pro Leu Gln Tyr Arg Ala Glu Thr Asn Leu Met
210 215 220
Leu Tyr Gly Arg Gln Gln Cys Gln Leu Phe Gly Gly Val Asn Glu Thr
225 230 235 240
Met Val Arg Thr Leu Ala Thr Val Ser Gly Ser Val Ser Asp Glu Gln
245 250 255

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Thr Val Ala Ile Gly Phe Ala Met Asn Asn Leu Ile Tyr Gly Asn Glu
 260 265 270
 Leu Lys Glu Asn Lys Asp Arg Ile Lys Asp Ile Phe Lys Asn Arg Thr
 275 280 285
 Thr Leu Asp Leu Asn Pro Tyr Tyr Glu Leu Asn Asn Asp Ser Trp Arg
 290 295 300
 Val His Val Gly Ala Asn Val Asp Leu Ser Phe Gly Asn Gly Lys Ala
 305 310 315 320
 Val Arg Val Ser Pro Asp Val Lys Ala Gln Tyr Val Phe Ser Asp Ser
 325 330 335
 Tyr Val Leu Tyr Ala Lys Ala Thr Gly Gly Arg Gln Leu Asn Asp Phe
 340 345 350
 Arg Arg Leu Glu Thr Tyr Asn Pro Tyr Leu Asp Pro Gly Gln Glu Val
 355 360 365
 Lys Asp Thr Tyr Glu Gln Leu Asn Ala Gly Leu Gly Phe Lys Ala Ser
 370 375 380
 Pro Thr Pro Gly Leu Trp Phe Asp Ile Phe Gly Gly Tyr Gln Asn Leu
 385 390 395 400
 Lys Asp Asp Leu Tyr Gln Ser Ala Asp Ala Trp Glu Gly Gly Asp Gly
 405 410 415
 Ala Asn Tyr Ile Gly Leu Gly Gln Thr His Thr Asp Asn Phe Tyr Ala
 420 425 430
 Gly Ile Lys Ala Ser Tyr Glu Tyr Lys Asp Leu Phe Ala Ile Ser Ala
 435 440 445
 Gly Gly Thr Tyr Tyr His Trp Asn Ala Asp Ala Gln Thr Thr Gly Ser
 450 455 460
 Lys Ser Ser Asp Tyr Asn Glu Ala Leu Leu Met Lys Pro Glu Phe Asp
 465 470 475 480
 Leu Gly Ile His Thr Glu Ile His Pro Ile Ala Ala Leu Trp Leu Asn
 485 490 495
 Ala Gly Tyr Gln Tyr Thr Arg Arg Ala Glu Arg Tyr Thr Gly Leu Tyr
 500 505 510
 Ala Lys Ser Ile Pro Ala Val Ser Asn Leu Ser Leu Gly Ala Thr Tyr
 515 520 525
 Arg Ile Phe Lys Gly Ile Ser Ala Tyr Val Lys Ala Asp Asn Leu Leu
 530 535 540
 Asn Lys Lys Tyr Gln Tyr Tyr Leu Tyr Tyr Pro Val Glu Gly Ile Asn
 545 550 555 560
 Phe Val Gly Gly Leu Ser Phe Arg Phe
 565

<210> 8796
 <211> 436
 <212> PRT
 <213> B.fragilis

<400> 8796
 Ile Val Met Lys Ser Ile Leu Leu Leu Leu Ile Ile Thr Leu Leu Gly
 1 5 10 15
 Cys Ser Ser Asn Met Lys Gln Glu Pro Ile Ser Lys Ser Gly Ile Pro
 20 25 30
 Val Ile Asn Leu Ser Glu Asp Val Ser Thr Val Pro Ser Leu Leu Leu
 35 40 45
 Ser Glu Ser Ala Glu Lys Leu Glu Ile Val Pro Leu Glu Met Thr Asp
 50 55 60
 Gln Ser Met Leu Gly Glu Ile Arg Arg Ile Gln Val Thr Glu His Asp
 65 70 75 80
 Ile Trp Ile His Asp Phe Asn Lys Phe Tyr Ile Tyr Arg Phe Ser Arg
 85 90 95

Thr Gly Lys Phe Leu Asn Arg Ile Gly Ser Ile Gly Gln Ala Pro Gly
 100 105 110
 Glu Tyr Val Asn Phe Ser Thr Phe Leu Val Asp Glu Tyr Lys Lys Glu
 115 120 125
 Val Tyr Ile Ile Ser Asn Asn Asn Gly Ile Leu Val Tyr Asn Phe Lys
 130 135 140
 Gly Glu Phe Lys Lys Lys Ile Val Asp Gln Gln Thr Ile Asn Asn Leu
 145 150 155 160
 Phe Ser Ser Val Tyr Ser Gln Tyr Ile Leu Tyr Asn Gly Asn Phe Phe
 165 170 175
 Ala Ala Gln Asn Ile Ala Leu Tyr Lys Leu Ile Asp Lys Asp Ser Leu
 180 185 190
 Trp Ser Phe Ala Phe Leu Asp Thr Ala Phe Gln Glu Lys Lys Leu Phe
 195 200 205
 Lys Asn Pro Ala His Met Gly Arg Glu Glu Gln Ile Ile Ala Asn Cys
 210 215 220
 Val Asp Lys Gly Arg Met Ile Asn Leu Trp Met Glu Tyr Gln Thr Ser
 225 230 235 240
 Ile Asp Thr Tyr Asn Asn Gln Leu Thr Leu Lys Tyr Pro Asp Thr Asp
 245 250 255
 Thr Ile Tyr Cys Tyr Asp Asp Ala Thr Asn Asp Leu Leu Ser Gln Tyr
 260 265 270
 Val Ile Cys Thr Arg Glu Glu Lys Gly Asp Tyr Glu Val Thr His Leu
 275 280 285
 Trp Phe Lys Asp Arg Lys Ala Phe Asp Tyr Phe Ser Ile Lys Ser Tyr
 290 295 300
 Tyr Pro Thr Lys Ala Phe Ile Tyr Leu Val Gly Ser Lys Gly Glu Glu
 305 310 315 320
 Val Tyr Thr Tyr Cys Tyr Asn Lys Lys Asp Gly Ser Val Arg Leu Gln
 325 330 335
 Lys Arg Gln Ser Ala Ile Thr Glu Arg Asp Val Pro Trp Phe Ser Phe
 340 345 350
 Pro Leu Arg Gln Met Lys Arg Asp Phe Val Leu Asp Asn Asp Leu Gly
 355 360 365
 Gly Gly Asp Phe Thr Val Asp Ser Arg Ser Ser Gly Lys Tyr Trp Val
 370 375 380
 Asp Ile Leu Glu Pro Gly Gly Asp Glu Asn Trp Ile Asp Ile Asp Gln
 385 390 395 400
 Ile Lys Ser Ser Thr Val Ile Asp Glu Ser Lys Lys Lys Glu Leu Ile
 405 410 415
 Arg Val Leu Glu Ser Ala Thr Glu Asp Ser Asn Pro Ile Leu Met Ile
 420 425 430
 Ala Thr Leu Lys
 435

<210> 8797

<211> 436

<212> PRT

<213> B.fragilis

<400> 8797

Ile Val Met Lys Ser Ile Leu Leu Leu Leu Ile Ile Thr Leu Leu Gly
 1 5 10 15
 Cys Ser Ser Asn Lys Lys Gln Glu Pro Ile Ser Arg Ser Gly Val Pro
 20 25 30
 Val Ile Asn Leu Ser Glu Asp Val Ser Thr Val Pro Ser Leu Leu Leu
 35 40 45
 Ser Glu Ala Ala Glu Lys Leu Glu Ile Val Pro Leu Glu Met Thr Asp
 50 55 60

Glu Ser Val Leu Ser Asp Ile Thr Glu Met Gln Val Thr Asp His Asn
 65 70 75 80
 Ile Trp Ile Asp His Gly Arg Glu Phe Tyr Ile Tyr Arg Phe Ser Arg
 85 90 95
 Thr Gly Lys Phe Leu Asn Arg Ile Gly Ser Ile Gly Gln Gly Pro Gly
 100 105 110
 Glu Tyr Val Asn Tyr Leu Thr Phe Leu Val Asp Glu Asp Lys Lys Glu
 115 120 125
 Val Tyr Ile Phe Ser Thr Asn Asn Gly Val Leu Val Tyr Asp Phe Glu
 130 135 140
 Gly Gly Phe Lys Lys Gln Ile Ser Asp Phe Gln Thr Met Val Gly Met
 145 150 155 160
 Phe Ser Ser Ile Tyr Lys Gln Tyr Ile Leu Asn Asp His Lys Phe Phe
 165 170 175
 Ala Ile Gln Asn Phe Gly Leu Tyr Arg Ser Val Asp Lys Asp Ser Leu
 180 185 190
 Trp Ser Phe Val Ser Leu Asp Asp Asn Phe Gln Lys Lys Arg Leu Phe
 195 200 205
 Lys Asn Pro Val His Val Gly Lys Glu Glu Gln Ile Ile Ala Asn Arg
 210 215 220
 Ala Asn Met Asp Arg Met Val Asn Tyr Trp Met Glu Tyr Leu Thr Ser
 225 230 235 240
 Val Asp Ile Tyr Asn Gly Gln Leu Thr Leu Lys Tyr Pro Asp Thr Asp
 245 250 255
 Thr Ile Tyr Cys Tyr Asp Asp Ala Thr Asn Gln Leu Leu Pro Gln Tyr
 260 265 270
 Ala Ile Phe Thr Asp Glu Glu Lys Gly Asp Tyr Glu Ala Thr His Leu
 275 280 285
 Trp Phe Lys Asp Arg Lys Ala Phe Asp Tyr Phe Ser Ile Phe Ser Tyr
 290 295 300
 Tyr Pro Thr Lys Asp Phe Ile Tyr Leu Val Gly Ser Lys Gly Glu Glu
 305 310 315 320
 Val Tyr Thr Tyr Cys Tyr Asn Lys Lys Asp Gly Ser Val Arg Leu Gln
 325 330 335
 Lys Arg Gln Ser Thr Ile Thr Glu Arg Asp Val Pro Trp Phe Ser Phe
 340 345 350
 Pro Leu Arg Gln Met Lys Arg Asp Phe Val Leu Asp Asn Asp Leu Gly
 355 360 365
 Gly Gly Asp Phe Thr Val Asp Ser Arg Ser Ser Gly Lys Tyr Trp Ile
 370 375 380
 Asp Ile Leu Glu Pro Gly Gly Asp Glu Asn Trp Ile Asp Ile Asp Gln
 385 390 395 400
 Ile Lys Ser Ser Thr Val Ile Asp Glu Ser Lys Lys Lys Glu Leu Ile
 405 410 415
 Arg Val Leu Glu Ser Thr Thr Glu Asp Ser Asn Pro Ile Leu Met Ile
 420 425 430
 Ala Thr Leu Lys
 435

<210> 8798
 <211> 411
 <212> PRT
 <213> B.fragilis

<400> 8798
 Asn Gly Val Cys Met Lys Lys Tyr Trp Phe Ile Val Glu Thr Tyr Val
 1 5 10 15
 Phe Leu Trp Lys Lys Glu Asp His Ile Leu Val Tyr Asn Ser Ile Ser
 20 25 30

Gly Lys Gly Tyr Ile Tyr Lys Cys Ser Pro Asp Leu Leu Ser Phe Met
 35 40 45
 Asp Gln Leu Met Leu Pro Glu Asn Leu Tyr Cys Ser Gln Val Asp Glu
 50 55 60
 Glu Leu Leu Arg Arg Lys Ser Ile Gly Glu Phe Val Ile Ser Met Gln
 65 70 75 80
 Ser Asn Phe Cys Gly Ser Leu Phe Asp Val Asp Glu Phe Pro Gln Lys
 85 90 95
 Pro Ile Val Ala Val Pro Asp Val Asn Ile Gly Glu Asp Ile Glu Gly
 100 105 110
 Val Asp Asn Ser Val Phe Gly Gly Asn Val Leu Arg Asn Leu Thr Asp
 115 120 125
 Val Phe Ile Cys Leu Thr Gly Lys Cys Asn Lys Asn Cys Pro Asp Cys
 130 135 140
 Asn Leu Ile Tyr Lys Lys Met Cys Trp Cys His Lys Ser Asn Glu Ser
 145 150 155 160
 Leu Ala Phe Glu Lys Leu Glu Ala Ile Leu Lys Lys Leu Glu Tyr Leu
 165 170 175
 Asn Val Phe Glu Leu His Phe Thr Gly Gly Asn Met Phe Leu Tyr Pro
 180 185 190
 Tyr Trp Arg Glu Leu Leu Ile Lys Leu Asn Glu Ile Ser Tyr Lys Lys
 195 200 205
 Ser Phe Tyr Val His Tyr Ser Gln Leu Arg Gly Tyr Asp Glu Asp Ile
 210 215 220
 Asp His Ile Leu Asn Leu Glu Asn Ser Val Ile Arg Ile Leu Val Asp
 225 230 235 240
 Phe Ala Asp Phe Asp Val Glu Asn Leu Leu Leu Ile Ser Lys Ser Gly
 245 250 255
 Gly Pro Phe Glu Tyr Leu Phe Lys Ile Thr Ser Trp Asn Glu Tyr Asn
 260 265 270
 Glu Ala Cys Asp Ile Ile Glu Arg Leu Cys Leu Asn Ala Lys Ile Ile
 275 280 285
 Pro Phe Tyr Asn Val Gly Asn Tyr Ser Phe Phe Glu Asp Asn Val Phe
 290 295 300
 Leu Asn Met Gln Asp Ile Leu Ser Thr Lys Trp Thr Lys Asn Glu Ile
 305 310 315 320
 Phe Ala Asn Gln Lys Leu Asn Thr Asn Asp Phe Gly Lys Ile Arg Ile
 325 330 335
 Leu Glu Asn Gly Phe Val Tyr Ala Asn Leu Asn Phe Ala Pro Ile Gly
 340 345 350
 Lys Trp His Asp Asp Tyr Arg Glu Ile Val Tyr Asn Glu Leu Lys Arg
 355 360 365
 Gly Thr Ser Trp Arg Arg Thr Arg Asp Ser Leu Pro Val Cys Lys Glu
 370 375 380
 Cys Leu Cys Lys Tyr Leu Cys Pro Ser Pro Ser Asn Tyr Glu Leu Ala
 385 390 395 400
 Ile Gly Lys Ser Asn Leu Cys His Val Lys Ser
 405 410

<210> 8799

<211> 126

<212> PRT

<213> B.fragilis

<400> 8799

Ser Val Thr Cys Ile Ser Val Ile Ser Leu Asn Thr Asp Ser Ser Val
 1 5 10 15
 Ile Ser Lys Gly Thr Ile Ser Asn Phe Ser Ala Ala Ser Leu Lys Arg
 20 25 30

Ser Glu Gly Thr Val Asp Thr Ser Ser Glu Arg Leu Ile Thr Gly Thr
 35 40 45
 Pro Asp Leu Asp Ile Gly Ser Cys Phe Leu Leu Glu Leu His Pro Asn
 50 55 60
 Ser Val Ile Ile Ser Asn Asn Asn Ile Asp Phe Ile Thr Ile Tyr Leu
 65 70 75 80
 Leu Glu Thr Thr Tyr Phe Ser Ile Ile Gly Thr Tyr Ser Ile Ile Leu
 85 90 95
 Lys Leu Gln Ser Ser Lys Pro Asp Cys Tyr Pro Gln Ser His Phe Pro
 100 105 110
 Lys Pro Glu Leu Ala Pro Phe Ser Trp Ile His Leu Leu Gln
 115 120 125

<210> 8800

<211> 399

<212> PRT

<213> B.fragilis

<400> 8800

Asn Glu Phe Cys Met Lys Val Leu Tyr Val Ile Phe Ile Cys Val Leu
 1 5 10 15
 Tyr Ser Cys Met Gln Asn Val Glu Pro Asp Asn Lys Ile Asn Val Gly
 20 25 30
 Ala Ala Met Asn Ala Leu Gly Lys Ile Thr Ala Gln Thr Ile Ser Ser
 35 40 45
 Asn Val Arg Tyr Val Ala Leu Glu Thr Asn Asp Ser Ser Leu Val Gly
 50 55 60
 Glu Met Pro Asp Met Arg Val Leu Glu His Ala Ile Leu Val Ser Ser
 65 70 75 80
 Val Asn Gln Cys Leu Lys Leu Phe Asp Arg Ser Thr Gly Lys Phe Ile
 85 90 95
 Arg Asp Ile Gly His Val Gly Thr Asp Pro Gln Gly Tyr Ala Lys Asp
 100 105 110
 Ala Trp Gly Lys Val Asn Tyr Trp Val Asp Tyr Asp Gln Asn Ile Ile
 115 120 125
 Tyr Val Leu Gly Trp Gly Asn Asp Leu Ile Leu Tyr Asp Leu Ala Gly
 130 135 140
 Asn Tyr Lys Asp Arg Ile Cys Ile Asp Asp Asn Val Arg Tyr Asn Leu
 145 150 155 160
 Gln Gln Ser Tyr Leu Tyr Val Thr Tyr Gly Lys Leu Trp Gly His Asn
 165 170 175
 Lys Leu Asp Ile Ser Lys Ser Pro Leu Phe Cys Ile Asp Glu Asn Ser
 180 185 190
 Asn His Ile Thr Asp Ile Val Gly Leu Pro Val Asp Leu Leu Pro Met
 195 200 205
 Asp Asp Leu Gln Ser Val Ser Glu Leu Leu Gly Asp Tyr Val Ser Tyr
 210 215 220
 Gly Gly Asp Leu Thr Met Ala Ser Phe Ala Asn Gly Gly Lys Phe Tyr
 225 230 235 240
 Thr Ala Ile Asn Ser Pro Ser Leu Trp Arg Phe Glu Asn Asp Ile Arg
 245 250 255
 Leu Lys Gln Thr Phe Asn Asp Thr Ile Tyr Thr Leu Ser Asp Ser Lys
 260 265 270
 Ile Lys Pro Tyr Leu Ile Phe Glu Leu Gly Asp Trp Ala Trp Gln Tyr
 275 280 285
 Gln Asp Arg Leu Glu Glu Gly Gly Cys Glu Lys Lys Ile Met Ile Asp
 290 295 300
 Tyr Ala Leu Glu Asn Glu Arg Cys Ile Tyr Phe His Phe His Thr Gly
 305 310 315 320

Phe Tyr Thr Lys Asn Arg Gln Ala Phe Cys Gly Leu Tyr Tyr Lys Ala
 325 330 335
 Asp His Arg Val Val Leu Met Cys Gly Asp Arg Leu Leu Asp Thr Val
 340 345 350
 Asn Arg Gln Ser Leu Arg Val Arg Gly Val Ser Ser Asp Gly Cys Phe
 355 360 365
 Ile Ala Leu Leu Gln Pro Asp Glu Leu Cys Asp Glu Val Lys Lys Lys
 370 375 380
 Thr Gly Ser Lys Glu Glu Asp Asn Pro Ile Val Val Ile Leu Glu
 385 390 395

<210> 8801
 <211> 428
 <212> PRT
 <213> B.fragilis

<400> 8801

Lys Ile Leu Cys Ile Phe Thr Ser Asn Leu Met Met Asp Lys Ala Met
 1 5 10 15
 Arg Ile Ile Leu Ile Leu Gly Ala Met Ile Leu Gly Phe Thr Ala Cys
 20 25 30
 Ser Asn Lys Lys Thr Val Asn Pro Asn Pro Val Val Arg Asp Asn Ile
 35 40 45
 Ile His Leu Ser Thr Ala Ile Lys Asn Val Arg Glu Glu Met Met Leu
 50 55 60
 Ser Glu Leu Val Asp Ser Val Arg Tyr Ile Pro Leu Glu Thr Asn Pro
 65 70 75 80
 Asn Cys Met Leu Arg Asn Tyr Gln Arg Leu Thr Phe Ser Pro Gln Tyr
 85 90 95
 Ile Phe Tyr Leu Asn Tyr Cys Phe Asp Trp Asn Gly Gln Phe Leu Phe
 100 105 110
 Arg Ile Gly Ser Gln Gly Gln Gly Ala Cys Glu Asp Ile Tyr Ala His
 115 120 125
 Val Ala Glu Ile Val Tyr Leu Asn Asn His Phe Tyr Gly Asn Ala Ser
 130 135 140
 Lys Ile Ile Glu Tyr Asp Arg Gly Lys Cys Thr Gly Lys Glu Leu
 145 150 155 160
 Ser Trp Phe Thr Gln Lys Thr Met Asp Thr Ala Pro Val Gly His Leu
 165 170 175
 Val Asn Gln Val Cys Phe Ala Pro Ala Gly Glu Asn Leu Met Phe Tyr
 180 185 190
 Asn Ser Pro Asp Thr Val Tyr Phe Ile Asn Thr Asp Tyr Glu Phe Val
 195 200 205
 Ala Lys Arg Ser Met Met Pro Trp Asn Arg Lys Gly Ile Ala Pro Ser
 210 215 220
 Met Gly Ser Val Lys Tyr Thr Ser Tyr Tyr Lys Asp Thr Thr Leu Phe
 225 230 235 240
 Tyr Ile Phe Tyr Thr Asp Thr Val Phe Thr Val Thr Pro Thr Ser Leu
 245 250 255
 Val Pro Arg Trp Val Val Glu Leu Asp Glu Glu Leu Arg Phe Pro Thr
 260 265 270
 Gln Tyr Leu Tyr Glu Asp Gly Leu Phe Ser Asp Ala Phe Lys Cys Trp
 275 280 285
 Glu Ser Gly Asn Leu Glu Asn Ala Lys Met Ile Lys Met Leu Asp His
 290 295 300
 Lys Tyr Ile Val Ser Gly Val Phe Glu Thr Glu His Phe Val Phe Leu
 305 310 315 320
 Ser Val Tyr Glu Tyr Met Ala Tyr Trp Glu Leu Arg Lys Leu Pro Lys
 325 330 335

Pro Pro Leu Leu Thr Ala Ile Tyr Asn Lys Arg Thr Gly Glu Thr Phe
 340 345 350
 Ala Val Lys Gln Ile Ile Asp Asp Leu Gly Gly Met Lys Thr Phe Phe
 355 360 365
 Pro Ser Trp Gly Ala Tyr Asn Glu Lys Leu Leu Ala Thr Ile Trp Pro
 370 375 380
 Tyr Lys Leu Lys Glu Phe Ile Glu Glu Glu Gln Ser Ala Gly Arg Thr
 385 390 395 400
 Val Ala Pro Gln Ile Leu Asn Leu Met Lys Arg Val Arg Glu Asp Asp
 405 410 415
 Asn Pro Ile Leu Ile Ile Ala Asn Leu Lys Thr Lys
 420 425

<210> 8802
 <211> 561
 <212> PRT
 <213> B.fragilis

<400> 8802

Asp Thr Met Cys Leu Asn Lys Asn Ile Lys Ser Phe Leu Gly Ile Leu
 1 5 10 15
 Met Cys Gly Ile Leu Ala Phe Leu Pro Val Ser Cys Ser Asp Asp Ser
 20 25 30
 Pro Val Thr Gly Ser Pro Leu Leu Pro Glu Ala Pro Glu Gly Lys Val
 35 40 45
 Asn Val Phe Leu Ser Leu His Lys Gly Ser Asp Tyr Glu Ser Pro Ala
 50 55 60
 Thr Arg Ser Gly Thr Ala Ala Asp Glu Thr Ile Met Gly Pro Pro Trp
 65 70 75 80
 Val Leu Val Phe Leu Gly Asn Asp Lys Asp Ala Thr Phe Leu Glu Ala
 85 90 95
 Val Gln Ala Asp Met Thr Ser Val Gly Glu Leu Tyr Ala Gln Leu Ser
 100 105 110
 Ala Cys Asn Ser Ser Val Val Leu Leu Ile Ser Asn Ala Asp Glu
 115 120 125
 Leu Ile Gln Ala Lys Leu Gly Ser Leu Thr Thr Thr Thr Leu Ser
 130 135 140
 Asp Ala Val Thr Asn Leu Leu Leu Tyr Gly Asp Pro Ser Asp Ser Pro
 145 150 155 160
 Val Gly Gly Asn Ser Ala Leu Ala Ile Pro Gln Ala Thr Val Pro Phe
 165 170 175
 Thr Gly Lys Lys Ile Pro Met Ser Ala Tyr Cys Pro Leu Pro Gln Ile
 180 185 190
 Ile Thr Gly Thr Thr Val Gly Thr Val Gly Thr Pro Leu Arg Leu Lys
 195 200 205
 Arg Ile Val Ser Lys Leu Tyr Val Asp Ala Ser Gly Ala His Ala Ser
 210 215 220
 Asp Gly Phe Ile Leu Thr Gly Val Ser Val Ile Asn Val Pro Val Gln
 225 230 235 240
 Gly Ala Leu Ala Phe Glu Tyr Gly Asn Ala Asn Glu Thr Leu Pro Ile
 245 250 255
 Thr Ala Gln Phe Thr Asp Tyr Gly His Lys Ser Gly Ser Ala Ser Arg
 260 265 270
 Leu Asp Asn Pro Ile Ile Ala Ser Ser Thr Gly Phe Ala Gly His Ile
 275 280 285
 Thr Ala Gly Met Gly Ser Glu Asp Tyr Pro Val Tyr Val Tyr Glu Thr
 290 295 300
 Ala Gly Gly Pro Ala Asp Arg Ser Asp Val Ile Leu Ala Gly Lys Phe
 305 310 315 320

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

<400> 8803

Gln	Ile	Arg	Arg	Met	Pro	Thr	Val	Thr	Lys	Asn	Leu	Ile	Ile	Ile	Asn
1				5					10					15	
Val	Leu	Leu	Phe	Leu	Ala	Gln	Phe	Val	Ala	Gln	Ser	Tyr	Gly	Ile	Asn
			20					25					30		
Leu	Ser	Asp	Tyr	Leu	Gly	Leu	His	Phe	Phe	Leu	Ala	Asp	Asn	Phe	Asn
		35				40						45			
Pro	Ala	Gln	Leu	Phe	Thr	Tyr	Met	Phe	Met	His	Gly	Gly	Phe	Thr	His
	50				55						60				
Ile	Phe	Phe	Asn	Met	Phe	Ala	Val	Trp	Met	Phe	Gly	Arg	Ile	Leu	Glu
65				70						75					80
Gln	Val	Trp	Gly	Pro	Lys	Arg	Phe	Leu	Phe	Tyr	Tyr	Ile	Leu	Cys	Gly
				85					90					95	
Val	Gly	Ala	Gly	Leu	Leu	Gln	Glu	Gly	Val	Gln	Tyr	Ile	Gln	Tyr	Val
			100					105					110		
Thr	Glu	Leu	Ser	Gln	Tyr	Thr	Ser	Val	Asn	Ile	Gly	Thr	Gly	Ile	Ile
		115				120						125			
Pro	Met	Ser	Glu	Tyr	Leu	Asn	Met	Met	Thr	Thr	Val	Gly	Ala	Ser	Gly
	130					135					140				
Ala	Val	Tyr	Ala	Ile	Leu	Leu	Ala	Phe	Gly	Met	Leu	Phe	Pro	Asn	Gln
145				150						155					160

Gln Leu Phe Ile Phe Pro Leu Pro Phe Pro Ile Lys Ala Lys Phe Phe
 165 170 175
 Val Ile Gly Tyr Ala Leu Ile Glu Leu Tyr Ala Gly Phe Ala Asn Asn
 180 185 190
 Pro Gly Asp Asn Val Ala His Phe Ala His Leu Gly Gly Met Ile Phe
 195 200 205
 Gly Phe Ile Leu Ile Met Tyr Trp Arg Lys Lys Asn Arg Asn Asn Gly
 210 215 220
 Thr Tyr Tyr Asn
 225

<210> 8804

<211> 309

<212> PRT

<213> B.fragilis

<400> 8804

Ser Cys Thr Gly Glu Lys Arg Thr Glu Thr Met Gly His Ile Ile Thr
 1 5 10 15
 Asp Leu Lys Glu Ala Phe Arg Arg Gly Asn Val Tyr Ile Gln Leu Ile
 20 25 30
 Phe Ile Asn Val Gly Val Phe Val Ile Thr Thr Leu Ile Gly Ile Leu
 35 40 45
 Leu Gln Leu Phe Asn Arg Ser Ala Ala Gly Ile Phe Glu Leu Leu Ala
 50 55 60
 Leu Pro Ala Ser Phe Thr Arg Phe Ala Trp Gln Pro Trp Ser Ile Phe
 65 70 75 80
 Thr Tyr Met Phe Met His Ala Gly Phe Leu His Ile Leu Phe Asn Met
 85 90 95
 Leu Trp Leu Tyr Trp Phe Gly Ala Leu Phe Leu Tyr Phe Phe Ser Gly
 100 105 110
 Lys His Leu Arg Gly Leu Tyr Ile Val Gly Gly Ile Cys Gly Gly Leu
 115 120 125
 Leu Tyr Met Ile Ser Tyr Asn Val Phe Pro Tyr Phe Arg Pro Met Thr
 130 135 140
 Ala Tyr Ser Thr Met Val Gly Ala Ser Ala Ser Val Leu Ala Ile Val
 145 150 155 160
 Val Ala Thr Ala Tyr Arg Glu Pro Asn Tyr Pro Val Arg Leu Leu Phe
 165 170 175
 Phe Gly Asn Val Arg Leu Lys Tyr Leu Ala Leu Ile Val Val Leu Thr
 180 185 190
 Asp Leu Leu Phe Ile Thr Ser Ser Asn Ala Gly Gly His Ile Ala His
 195 200 205
 Leu Gly Gly Ala Leu Ala Gly Leu Trp Phe Ala Ala Ser Leu Asn Lys
 210 215 220
 Gly Lys Asp Ile Thr Ser Trp Val Asn Lys Ala Leu Asp Ala Ile Ala
 225 230 235 240
 Ala Leu Phe Ser Ala Lys Thr Trp Lys Arg Lys Pro Lys Met Lys Val
 245 250 255
 His Tyr Gly Asn Asn Thr Arg Gln Asn Asp Tyr Asp Tyr Asn Ala Arg
 260 265 270
 Lys Lys Ala Gln Ser Asp Glu Ile Asp Arg Ile Leu Asp Lys Leu Lys
 275 280 285
 Lys Ser Gly Tyr Glu Ser Leu Thr Thr Glu Glu Lys Lys Ser Leu Phe
 290 295 300
 Asp Ala Ser Lys Arg
 305

<210> 8805

<211> 77
 <212> PRT
 <213> B.fragilis

<400> 8805

Ala	Asp	Ile	Gly	Ile	Phe	Phe	Pro	Val	Lys	Gly	Thr	Val	Ala	Cys	Gly
1				5					10					15	
Ile	Ala	Asn	Ala	Glu	Leu	Pro	Pro	Thr	Gly	Glu	Ser	Asp	Gly	Ser	Pro
		20						25					30		
Tyr	Arg	Arg	Arg	Leu	Val	Thr	Ala	Ser	Asp	Lys	Val	Val	Val	Val	Val
		35					40					45			
Arg	Leu	Pro	Asn	Phe	Ala	Cys	Ile	Asn	Ser	Ser	Ala	Phe	Glu	Ile	Asn
	50					55					60				
Ser	Lys	Thr	Thr	Glu	Glu	Leu	Gln	Ala	Leu	Asn	Cys	Ala			
65					70					75					

<210> 8806
 <211> 489
 <212> PRT
 <213> B.fragilis

<400> 8806

Lys	Asp	Arg	Gly	Trp	Gly	Pro	Gly	Asn	Lys	Lys	Trp	Arg	Met	Pro	Thr
1				5					10					15	
Leu	Asp	Glu	Leu	Lys	Leu	Leu	Gly	Asp	Gly	Ile	Arg	Glu	Thr	Ile	Ser
		20						25					30		
Ser	Thr	Pro	Asn	Trp	Asn	Ser	Ile	Ser	Ile	Ser	Ser	Asp	Asp	Gly	Ser
		35					40					45			
Phe	Val	Ile	Ser	Asn	Gly	Ile	Arg	Thr	Asn	Asn	Arg	Tyr	Tyr	Leu	Pro
	50					55					60				
Ala	Asn	Arg	Tyr	Gly	Asp	Ser	Gly	Glu	Tyr	Trp	Ser	Ala	Ser	Ala	Ala
65					70					75					80
Ile	Ser	Gly	Ser	Ala	Arg	Gly	Leu	Cys	Phe	Arg	Tyr	Ser	Ser	Thr	Ser
				85					90					95	
Ile	Lys	Asp	Trp	Thr	Thr	Ala	Leu	Val	Ser	Gly	Ala	Ile	Arg	Cys	Val
		100						105					110		
Val	Asp	Ser	Glu	Asn	Asn	Tyr	Ser	Lys	Val	Tyr	Arg	Val	Val	Tyr	Ser
		115					120					125			
Asn	Thr	Asp	Pro	Leu	Asn	Gln	Glu	Asn	Asn	Leu	Tyr	Ser	Val	Pro	Pro
	130					135					140				
Pro	Ala	Leu	Leu	Asn	Glu	Gly	Glu	Thr	Ile	Thr	Leu	Pro	Ala	Leu	Ser
145				150						155					160
Thr	Lys	Phe	Asn	Asp	Tyr	Glu	Val	Arg	Glu	Gly	Ser	Lys	Val	Val	Thr
			165						170					175	
Lys	Tyr	Phe	His	Ser	Gly	Trp	Leu	Val	Asn	Gly	Arg	His	Phe	Asp	Phe
		180					185					190			
Gly	Asp	Ser	Tyr	Val	Val	Gly	Ala	Asp	Gly	Ile	Gly	Asn	Thr	Glu	Val
	195					200					205				
Glu	Ile	Arg	Pro	Glu	Trp	Thr	Lys	Leu	Cys	Lys	Ile	Glu	Tyr	Val	Ala
	210					215					220				
Thr	Pro	Pro	Tyr	Pro	Gly	Ala	Ile	Phe	Tyr	Trp	Arg	Phe	Pro	Ser	Thr
225				230						235					240
Thr	Ile	Phe	Val	Lys	Ile	Gly	Glu	Lys	His	Ser	Leu	Phe	Tyr	Val	Glu
			245						250					255	
Ser	Ala	Val	Asn	Ser	Ser	Pro	Val	Lys	Met	Cys	Thr	Gly	Leu	Leu	Val
		260					265					270			
Asn	Gly	Ile	Arg	Tyr	Ser	Phe	Gly	Asp	Glu	Ile	Val	Ala	Ser	Thr	Asp
	275						280					285			
Val	Lys	Ile	Glu	Pro	Tyr	Trp	Ala	Asn	Thr	Pro	Glu	Thr	Pro	Phe	Ala

290 295 300
 Ser Thr Asn Leu Glu Leu Ser Asn Pro Gly Ser Thr Asp Ala Thr Phe
 305 310 315 320
 Ile Phe Ala Pro Thr Gly Ser Lys Gly Ser Lys Cys Ser His Gln Val
 325 330 335
 Ala Asn Ser Asn Phe Pro Ile Asn Gly Val Thr Ile Pro Ser Leu Leu
 340 345 350
 Pro Thr Asp Tyr Asp Asn Ala Arg Arg Leu Ile His Ser Val Glu Gly
 355 360 365
 Leu Lys Arg Gly Val Gly Asp Val Cys Arg Leu Val Gly Ile Pro Leu
 370 375 380
 Asn Glu Ile Asn Ala Lys Leu Ala Ala Gly Glu Leu Pro Asp Asn Lys
 385 390 395 400
 Thr Trp Arg Leu Pro Ala Val Tyr Glu Met Ala Ala Leu Leu His Pro
 405 410 415
 Tyr Gln Asp Ser Ser Glu Gly Arg Phe Tyr Pro Ile Leu Asn Thr Tyr
 420 425 430
 Phe Pro Tyr His Thr Val Tyr Ile Gly Ile Pro Gly Ile Ala Ala Ser
 435 440 445
 Tyr Ile Thr Ala Gly Ser Arg Asn Asn Asn Arg Val Val Thr Val Thr
 450 455 460
 Ile Ser Gln Gly Asp Gly Gly Ile Thr Gly Gly Met Phe Ser Ala Thr
 465 470 475 480
 Ser Asp Tyr Ala Arg Cys Ile Arg Gln
 485

<210> 8807
 <211> 189
 <212> PRT
 <213> B.fragilis

<400> 8807
 Asn Cys Phe Phe Phe Val Ile Phe Ala Cys Thr Lys Thr Asn Arg Met
 1 5 10 15
 Met Glu His Pro Leu Asn Gln Phe Lys Tyr Cys Pro Lys Cys Gly Ser
 20 25 30
 Ala Ala Phe Glu Ile His Asn Glu Lys Ser Lys Gln Cys Thr Asp Cys
 35 40 45
 Gly Phe Val Tyr Tyr Phe Asn Pro Ser Ser Ala Thr Val Ala Leu Ile
 50 55 60
 Leu Asn Glu Lys Asp Glu Leu Leu Val Cys Arg Arg Ala Lys Glu Pro
 65 70 75 80
 Ala Lys Gly Thr Leu Asp Leu Pro Gly Gly Phe Ile Asp Met Asn Glu
 85 90 95
 Thr Gly Glu Glu Gly Val Ser Arg Glu Val Glu Glu Glu Thr Gly Leu
 100 105 110
 Lys Val Lys Lys Ala Thr Tyr Leu Phe Ser Leu Pro Asn Ile Tyr Ile
 115 120 125
 Tyr Ser Gly Phe Pro Val His Thr Leu Asp Met Phe Phe Leu Cys Gln
 130 135 140
 Val Glu Asp Thr Ser His Phe Glu Ala Met Asp Asp Val Ala Asp Ser
 145 150 155 160
 Phe Phe Val Pro Leu Cys Gln Ile Asn Pro Glu Glu Phe Gly Leu Gly
 165 170 175
 Ser Ile Lys Lys Gly Leu Lys Arg Phe Leu Lys Glu Arg
 180 185

<210> 8808
 <211> 207

<212> PRT
 <213> B.fragilis

<220>

<221> UNSURE

<222> (199), (200), (201), (202), (205)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8808

Ile	Met	Asn	Ile	Asp	Ile	Lys	Glu	Ala	His	Arg	Arg	Met	Leu	Tyr	Leu
1				5					10					15	
Leu	Gln	Ser	Phe	Asp	Thr	Val	Cys	Lys	Lys	His	Asp	Ile	Asp	Tyr	Trp
			20					25					30		
Leu	Asp	Tyr	Gly	Thr	Leu	Leu	Gly	Ala	Ile	Arg	His	Gln	Gly	Phe	Ile
		35					40					45			
Pro	Trp	Asp	Thr	Asp	Thr	Asp	Val	Gly	Met	Leu	Arg	Ser	Asp	Tyr	Ala
	50					55				60					
Leu	Phe	Leu	Glu	Lys	Gly	Val	Ser	Glu	Leu	Pro	Gln	Asp	Ile	Phe	Phe
65					70					75					80
Gln	Thr	Pro	Glu	Thr	Glu	Pro	Ala	Met	Ala	Pro	Trp	Ser	Trp	Leu	Val
				85					90					95	
Glu	Ala	Arg	Leu	Arg	Asp	Arg	His	Ser	Arg	Tyr	Val	Pro	Asp	Lys	Lys
			100					105					110		
Thr	Pro	Ala	Glu	Pro	Met	Gln	Phe	Gly	Gly	Leu	Gln	Leu	Asp	Leu	Phe
		115					120					125			
Ile	Tyr	Asp	Trp	Asp	Gly	Lys	Tyr	Glu	Asn	Ala	Leu	Ser	Asn	Ser	Phe
	130					135					140				
Glu	Arg	Asn	Leu	Ser	Glu	Ser	Arg	Ile	His	Leu	Arg	Leu	Asp	Glu	Val
145					150					155					160
Glu	Tyr	Leu	Asp	Thr	Ala	Arg	Phe	Glu	Gly	Val	Glu	Phe	Pro	Val	Pro
				165					170					175	
Ser	Gly	Tyr	Asp	Ala	Tyr	Leu	Thr	Arg	Trp	Ser	Ser	Pro	Arg	Gly	Trp
			180					185					190		
Arg	Glu	Ala	Arg	Arg	Gly	Xaa	Xaa	Xaa	Xaa	Tyr	Gly	Xaa	Ser	Pro	
	195					200						205			

<210> 8809

<211> 77

<212> PRT

<213> B.fragilis

<400> 8809

Phe	Thr	Val	Phe	Ala	Asp	Asn	Ala	Ala	Gly	Ala	Ile	Phe	Val	Asp	Lys
1				5					10					15	
Phe	Phe	Leu	Glu	Thr	Ala	Asp	Gly	Ala	Tyr	Phe	Thr	Val	Asp	Pro	Ile
		20					25					30			
Ala	Lys	Ala	Arg	Ile	Arg	Leu	Lys	Lys	Thr	Val	Leu	Phe	Leu	Trp	Ile
	35					40					45				
Ala	Glu	Arg	Ala	Ile	Ile	Ile	Arg	Asn	Gly	Gln	Ala	Ile	Arg	His	Ile
	50				55					60					
Phe	Leu	Ile	Tyr	His	Ile	Val	Gly	Phe	Val	Ile	Asp	Val			
65					70					75					

<210> 8810

<211> 99

<212> PRT

<213> B.fragilis

<400> 8810

His Ile Leu Ile Asn His Leu Arg Ile Met Asn Lys Ala Glu Leu Ile
 1 5 10 15
 Asn Ala Met Ala Ala Glu Ser Gly Leu Ser Lys Val Asp Ser Lys Lys
 20 25 30
 Ala Leu Glu Ala Phe Phe Ser Ser Val Thr Lys Ala Leu Ser Ala Gly
 35 40 45
 Asp Lys Ile Ser Leu Val Gly Phe Gly Thr Phe Ser Val Ala Glu Arg
 50 55 60
 Ser Ala Arg Met Gly Ile Asn Pro Ser Thr Lys Lys Ala Ile Glu Ile
 65 70 75 80
 Pro Ala Lys Lys Val Ala Lys Phe Lys Pro Gly Ala Glu Leu Thr Asp
 85 90 95
 Ala Ile Lys

<210> 8811
 <211> 426
 <212> PRT
 <213> B.fragilis

<400> 8811
 Met Lys Gln Ile Phe Leu Phe Leu Phe Ile Phe Leu Leu Thr Ser Cys
 1 5 10 15
 Ile Ser Gly Gly Ala Lys Gln Asp Gln Ile Lys Val Ile Asp Arg Thr
 20 25 30
 Ile Arg Ile Gly Asp Ala Met Glu His Pro Val Pro Met Lys Leu Ser
 35 40 45
 Ala Phe Val Asp Ser Ile Thr Tyr Ile Pro Leu Glu Thr Thr Lys Ser
 50 55 60
 Tyr Val Lys Asp Lys Met Leu Ile Ser Tyr Val Glu Pro Tyr Trp Val
 65 70 75 80
 Val Tyr Pro Gly Ser Leu Phe Asp Lys Glu Gly Arg Phe Val Thr Asn
 85 90 95
 Ile Gly Ala Leu Gly Gln Gly Arg Gly Glu Glu Thr Asn Gly Trp Gly
 100 105 110
 Tyr Ser Val Phe Tyr Asp Leu Gln Arg Asn Val Phe Tyr Thr Leu Gly
 115 120 125
 Asp Lys Ile Ile Glu Phe Asp Ser Asn Arg Lys Phe Thr Gly Lys Glu
 130 135 140
 Val Arg Ile Ser Tyr Arg Glu Arg Asn Ala Met Gln Val Ala Gly Gly
 145 150 155 160
 Leu Lys Asn Val Val Ala Leu Leu Lys Ala Asp Thr Lys Tyr Leu Leu
 165 170 175
 Val Asn Tyr Pro Asp Ser Ile Phe Trp Met Asp Ser Asp Leu Glu Val
 180 185 190
 Thr His Asn Thr Arg Ile Ile Pro Asp Ser Leu Phe Leu Asp Pro Pro
 195 200 205
 Gly Asp Ala Asn Gly Met Ser Tyr Thr Phe Ser Arg Tyr Lys Asp Thr
 210 215 220
 Thr Ile Phe Tyr Asn Cys Phe Thr Asp Ala Ile Tyr Ala Val Thr Asp
 225 230 235 240
 Thr Gly Leu Gln Lys Arg Trp Asp Leu Asp Leu Lys Gly Leu Lys Pro
 245 250 255
 Asp Asn Arg Cys Phe Leu Asn Glu Leu Asn Arg Leu Tyr Leu Gln Glu
 260 265 270
 Met Val Lys Ile Val Arg Ser Ser Ser Gly Asn Glu Asn Val Val Lys
 275 280 285
 Ser Lys Ala Glu Asn Ser Glu Leu Ala Gln Leu Ile Asp Asp Lys Lys
 290 295 300

Trp Val Asn His Ala Tyr Glu Ser Glu Arg Tyr Val Leu Met Ser Trp
 305 310 315 320
 Val Asn Leu Lys Ala Phe Ser Gly Trp Arg Gly Leu Lys Glu Glu Ser
 325 330 335
 His Leu Ala Phe Tyr Asp Lys Arg Ser Gly Lys Thr Ile Ala Val Ala
 340 345 350
 Gly Asp Gly Leu Ile Asp Asp Ile Asp Gly Gly Met Met Phe Tyr Pro
 355 360 365
 Ser Leu Gly Val Cys Asp Gly Ala Met Val Tyr Ser Val Trp Pro Phe
 370 375 380
 Glu Leu Lys Glu Tyr Ile Gln Glu Lys Lys Ala Lys Gly Glu Ala Val
 385 390 395 400
 Ser Asp Arg Leu Ile Ala Leu Ala Asp Ser Leu Asp Asp Glu Gln Asn
 405 410 415
 Pro Ile Leu Val Ile Ala His Leu Lys Lys
 420 425

<210> 8812

<211> 100

<212> PRT

<213> B.fragilis

<400> 8812

Phe His Phe Val Lys Phe Thr Ile Cys Pro Val Ser Ser Val Cys Asn
 1 5 10 15
 Arg Ile Asn Ser Asp Glu Asp Ser Cys Ser Ala Lys Asn Ala Leu His
 20 25 30
 Leu Ala Ser Val Phe Val Tyr Ile Val Ala Val Leu Leu Ile Gly Gly
 35 40 45
 Cys Leu Asp Met Ile Phe Leu Asp Pro Ser Val Tyr Leu Ser Pro Val
 50 55 60
 Leu Ala Val Cys Phe Leu Ser Ser Ile Gly Ala Phe Ser Phe Ser Val
 65 70 75 80
 Cys Asn Gln Pro Leu Ser Ser Pro Ile Gly Ser Leu Ile Tyr Pro Pro
 85 90 95
 Phe Leu Val Ser
 100

<210> 8813

<211> 107

<212> PRT

<213> B.fragilis

<400> 8813

Leu Ile Ser Val Ala Tyr Lys Ala Ala Asn Ile Val Phe Phe Ser His
 1 5 10 15
 Ser Glu Val Ile Arg Arg Gln Ile Phe Glu Cys Glu Gly Asp Phe Trp
 20 25 30
 Asp Ala Ser Thr Asp Ile Gly Gly Ser Ile Val Cys Leu Phe Gly Asn
 35 40 45
 Met Ser Asn Glu Thr Ser Gln Phe Ser Phe Phe Arg Leu Ser Gly Gln
 50 55 60
 Ala Gly Pro Glu Lys Arg Leu Tyr Phe Val Ser Arg Phe Ile Val Leu
 65 70 75 80
 Phe Cys Pro Ala Phe Ile Phe Arg Gln Lys Glu Ser Asp Leu Glu Val
 85 90 95
 Asn Ile Pro Gly Ala Leu Gln Gly Gly Glu Phe
 100 105

<210> 8814
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 8814
 Ser Arg Arg Val Arg Val Gly Leu Tyr Gln Lys Arg Val Lys Lys Ile
 1 5 10 15
 Pro Glu Arg Glu Val Lys Tyr Ile Lys Thr Ser Thr Phe Val Lys Thr
 20 25 30
 Leu Asn Tyr Glu Lys Lys Asp Ile Thr Ile Asp Met Cys Arg Gly Met
 35 40 45
 Leu Cys Ala Cys Arg Leu Ala Gly Thr Asn Gln Arg Glu Asn Asn Val
 50 55 60
 Ser Arg Lys Ser Val
 65

<210> 8815
 <211> 1022
 <212> PRT
 <213> B.fragilis

<400> 8815
 Lys Leu Pro Val Trp Val Phe Pro Ala Ile Met Leu Gln Val Leu Lys
 1 5 10 15
 Asp Ser Cys Trp Glu Ile Ser Thr Arg Ser Val Phe Leu Lys Val Arg
 20 25 30
 Leu Ser Leu Asp Trp Gln Tyr Leu Pro His Leu Arg Thr Gly Ile Ala
 35 40 45
 Arg Ser Ser Leu Pro Leu Leu Leu Leu Ser Leu Phe Thr Ser Leu
 50 55 60
 Ser Arg Arg Leu Arg Ala Pro Gln Ser Ala Lys Leu Ser Gly Leu Ala
 65 70 75 80
 Gly Glu Ser Val Val Val Ile Glu Asn Arg Val Tyr Asn Asp Leu Pro
 85 90 95
 Ala Ala Ser Asn Ile Tyr Trp Asp Ala Ala Gln Gly Arg Leu Thr Phe
 100 105 110
 Asp Asp Val Pro Ser Tyr Val Pro Ala Ala Arg Asn Gln Lys Gln Gly
 115 120 125
 Val Tyr Phe Leu Tyr Gly Ser Leu Ile Ala Leu Gln Gly Gly Ser Ser
 130 135 140
 Ala Thr Asp Val Cys Gln Leu Asp Ala Ala Glu Val Asn Pro Val Trp
 145 150 155 160
 Lys Thr Asn Gln Ser Pro Asn Ile Pro Lys Phe Asn Pro Ala Ser Leu
 165 170 175
 Ala Pro Gly Ala Asp Leu Glu Asn Val Leu Thr His Ile His Asn Pro
 180 185 190
 Gly Asn Arg Ile Gly Asp Ile Cys Arg Tyr Leu Thr Gln Arg Gly Trp
 195 200 205
 Ala Pro Pro Gly Lys Lys Trp Lys Met Pro Val Lys Glu Arg Leu Glu
 210 215 220
 Ala Val Leu Asn Ser Ile Tyr Arg Thr Glu Gly Ser Trp Leu Pro Ile
 225 230 235 240
 Gly Gly Leu Ala Thr Asp Gly Thr Gly Glu Val Val His Gly Arg Leu
 245 250 255
 Ile Lys Asp Arg Phe Tyr Phe Pro Ala Ser Gly Ser Arg Lys Glu Asp
 260 265 270
 Gly Thr Phe Ile Glu Gln Pro Gly Val Ser Gly His Tyr Trp Ser Ser
 275 280 285

Ser Val Ile Ser Gly Ser Ile Gly Trp Gln Pro Ala Ser Leu Trp Phe
 290 295 300
 Gln Gly Gly Asp Ala Ala Ile Gln Ala Thr Ala Leu Asp Val Ala Leu
 305 310 315 320
 Pro Val Arg Cys Val Val Asp Asn Thr Ser Thr Asp Trp Pro Glu Leu
 325 330 335
 Ala Thr Val Thr Tyr Tyr Ala Tyr Pro Pro Gly Gly Ala Thr Leu Thr
 340 345 350
 Ser Glu Leu Pro Ala Asn His Phe Val Glu Gln Arg Lys Pro Phe Ala
 355 360 365
 Leu Pro Ser Thr Pro Leu Thr Leu Ser Asp Pro Ser Val Ala His Thr
 370 375 380
 Gly Trp Gly Asn Asn Leu Gly Leu Gly Glu Asn Thr Thr Ile Asn Thr
 385 390 395 400
 Ser Val Gly Ser Phe Tyr Ala Thr Phe Ser Gln Gly Ala Ser Leu Glu
 405 410 415
 Tyr Asp Ser Asn Leu Pro Ala Gly Thr Ala Leu Val Ser Gly Thr Val
 420 425 430
 Pro Gly Val Tyr Val Ala Ala Gly Gly Thr Ser Ile Lys Leu Ser Thr
 435 440 445
 Asn Gln Leu Val Cys Ser Asn Pro Gly Tyr Val His Thr Gly Trp Ser
 450 455 460
 Ile Asp Gly Val Tyr His Gly Leu Gly Ala Asn Tyr Val Met His Ala
 465 470 475 480
 Ser Gly Ser Arg Lys Ala Phe Ala Val Trp Ser Arg Asp Cys Trp Val
 485 490 495
 Glu Tyr Leu Ala Lys Ala Pro Ala Gly Ala Pro Ala Gly Val Thr Val
 500 505 510
 Thr Gly Thr Leu Pro Ser Pro Val Lys Val Ala Gln Asn Ser Ser Val
 515 520 525
 Thr Leu Ala Thr Glu Ala Gln Gly Leu Gln Val Cys Ser Asp Pro Arg
 530 535 540
 Trp Lys His Thr Ala Trp Thr Ala Gly Ala Phe Gly Gly Asn Thr Ile
 545 550 555 560
 Val Thr Asn Ala Leu Lys Ile Tyr Pro Glu Trp Thr Arg Tyr Tyr Gln
 565 570 575
 Val Thr Tyr Ser Pro Gln Pro Pro Ser Gly Thr Val Pro Gly Tyr Pro
 580 585 590
 Arg Ser Glu Ile Val Ala Pro Gly Ser Ser Val Met Leu Pro Val Gln
 595 600 605
 Leu His Thr Ser Asp Pro Leu Gln Val His Gln Ala Trp Leu Val Gly
 610 615 620
 Gly Gln Glu Lys Ala Pro Gly Thr Ser Val Ile Val Asn Gly Asp Met
 625 630 635 640
 Thr Ile Thr Ala Lys Trp Leu Leu Tyr Glu Val Ser Tyr Leu Ala Asn
 645 650 655
 Ala Pro Val Gly Thr Thr Ser Val Thr Pro Leu Pro Ala Leu Gln Lys
 660 665 670
 Ile Ala Pro Gly Lys Met Val Thr Leu Ser Ala Thr Arg Leu Val Cys
 675 680 685
 Ser Asp Pro Ala Trp Ile His Thr Gly Trp Ser Val Gly Gly Val His
 690 695 700
 Tyr Ile Leu Gly Ala Asn Ile Pro Val Leu Ser Asn Met Gln Val Ser
 705 710 715 720
 Ala Glu Trp Thr Lys Arg Phe Lys Ile Lys Tyr His Leu Asn Leu Pro
 725 730 735
 Ser Gly Thr Gly His Ala Gly Asp Met Leu Pro Glu Asp Glu Tyr Val
 740 745 750
 Met Pro Gly Gln Asn Val Thr Leu Ala Val Pro Arg Leu Lys Cys Ser

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755 760 765
 Asn Glu Asp Phe Phe Phe Thr Gly Trp Met Ile Asn Gly Gln Phe Tyr
 770 775 780
 Gly Leu Gly Ser Ser Tyr Thr Pro Leu Pro Gly Gln Asp Thr Asp Val
 785 790 795 800
 Tyr Ala Val Trp Lys Tyr Ala Gln Ala Met Glu Phe Asn Val Thr Val
 805 810 815
 Ser Asn Ser Gly Arg Gly Thr Asp Asn Ala Thr Leu Val Phe Thr Asp
 820 825 830
 Ser Lys Glu Thr Gly Ala Phe Phe Gln Ser Arg Gly Val Val Ala
 835 840 845
 Trp Ser Asn Thr Gly Ser Pro Val Thr Trp Phe Asp Pro Val Ser Thr
 850 855 860
 Gly Arg Thr Trp Ser Ser Asn Trp Met Ala Phe Ala Ser Glu Glu Leu
 865 870 875 880
 His Thr Tyr Ala Asn Leu Arg Asn Gly Gly Gly Asp Pro Cys Arg Leu
 885 890 895
 Ile Gly Tyr Ser Gln Lys Tyr Val Ser Thr Gln Ile Ser Lys Gly Glu
 900 905 910
 Leu Pro Asp Asn Arg Thr Trp Arg Leu Pro Lys Gly Arg Glu Tyr Met
 915 920 925
 Gln Tyr Gly Phe Thr Pro Glu Asn Thr Val Gly Ser Trp Ala Asn Gly
 930 935 940
 Trp Thr Phe Asn Asn Gly Lys Phe Leu Pro Ala Ser Gly Met Arg Ser
 945 950 955 960
 Val Ala Asp Gly Gln Leu Arg Glu Ser Gly Val Gly Tyr Tyr Trp Leu
 965 970 975
 Ser Asp His Phe Ala Ile Ile Asp His Phe Gly Lys Gln Tyr Met Gly
 980 985 990
 Arg Gly Ser Lys Val Ser Ser Asp Lys Val Ile Glu Glu Gly Val Val
 995 1000 1005
 Tyr His Ser Ala Ala Gly Phe Gln Ile Arg Cys Val Arg Gln
 1010 1015 1020

<210> 8816
 <211> 233
 <212> PRT
 <213> B.fragilis

<400> 8816
 Lys Arg Leu Ser Glu Asn Asn Asn Leu Ser Leu Pro Ile Leu Asn Met
 1 5 10 15
 Lys Ile Asn Tyr Thr Tyr Met Met Arg Tyr Ser Val Ile Ile Pro Val
 20 25 30
 Tyr Asn Arg Pro Asp Glu Val Asp Glu Leu Leu Gln Ser Leu Thr Ala
 35 40 45
 Gln His Phe Lys Asp Phe Glu Val Val Val Val Glu Asp Gly Ser Ser
 50 55 60
 Val Pro Cys Glu Lys Ile Val Asn Gln Tyr Gln Gly Lys Leu Asp Ile
 65 70 75 80
 His Tyr Tyr Asn Lys Pro Asn Ser Gly Pro Gly Gln Thr Arg Asn Tyr
 85 90 95
 Gly Ala Glu Arg Ser Asn Gly Glu Tyr Leu Ile Ile Leu Asp Ser Asp
 100 105 110
 Cys Ile Leu Pro Glu Gly Tyr Leu Asp Ala Val Glu Lys Glu Leu Gln
 115 120 125
 Thr Ala Pro Ala Asp Ala Phe Gly Gly Pro Asp Arg Ala His Ser Ser
 130 135 140
 Phe Thr Asp Ile Gln Lys Ala Ile Asn Tyr Ser Met Thr Ser Phe Phe

145 150 155 160
 Thr Thr Gly Gly Ile Arg Gly Gly Lys Lys Lys Met Asp Lys Phe Tyr
 165 170 175
 Pro Arg Ser Phe Asn Met Gly Val Pro Pro Gly Gly Leu Ser Gly Ile
 180 185 190
 Arg Thr Phe Leu Gln Tyr Ala Phe Arg Arg Thr His Arg Phe Gln Tyr
 195 200 205
 Pro His Ile Gln Gly Arg Ile Pro Met Pro Ser Leu Ser Arg Cys Leu
 210 215 220
 Gly Val Pro Gln Thr Thr Tyr Gly Phe
 225 230

<210> 8817
 <211> 254
 <212> PRT
 <213> B.fragilis

<400> 8817

Pro Val Leu Ser Leu Gly Asn Ala Glu Met Glu Arg Leu Arg Met Thr
 1 5 10 15
 Thr Lys Thr Gly Gln Ala Glu Trp Arg Ala Leu Asp Glu Asn Gln Lys
 20 25 30
 Met Arg Glu Leu Pro Leu Ala Ile Glu Leu Gln Asp Phe Thr Ile Asp
 35 40 45
 Glu Tyr Pro Pro Lys Leu Met Leu Ile Asn Asn Glu Thr Gly Glu Ala
 50 55 60
 Leu Pro Ser Lys Lys Pro Glu Asn Leu Leu Ile Glu Asp Asn Phe His
 65 70 75 80
 Thr Gly Arg Leu Leu Asp Trp Glu Ile Gly Ile Glu Lys Lys Ile Pro
 85 90 95
 Leu Ala Ala Ser Val Ala Thr Gln Asp Thr Leu Asn Phe Val Glu Phe
 100 105 110
 His Ser Met Gly Ala Thr Tyr Ala Val Tyr Leu Lys Ala Val Asn Asn
 115 120 125
 Lys Thr Gly Gln Gln Arg Glu Gly Trp Val Ser Cys Gly Ser Phe Met
 130 135 140
 Phe Pro Tyr Lys Ala Ile Arg Leu Asp Asp Gln Thr Ser Leu Val Met
 145 150 155 160
 Pro Glu Arg Glu Pro Arg Arg Phe Ala Ser Glu Val Lys Val Tyr Thr
 165 170 175
 Glu Ser Gly Cys Arg Asp Ser Ala Thr Ile Glu Val Asn Lys Pro Phe
 180 185 190
 Glu Leu Glu Gly Trp Lys Ile Tyr Gln Leu Ser Tyr Asp Glu Ser Lys
 195 200 205
 Gly Arg Trp Ser Asp Ile Ser Val Phe Glu Leu Val Arg Asp Pro Trp
 210 215 220
 Leu Pro Val Val Tyr Thr Gly Ile Trp Met Met Ile Ala Gly Ala Val
 225 230 235 240
 Cys Leu Phe Ala Leu Ser Gln Lys Arg Lys Glu Asp Asn Thr
 245 250

<210> 8818
 <211> 94
 <212> PRT
 <213> B.fragilis

<400> 8818

Lys Ser Val Ser Lys Pro Ser Leu Leu Val Phe His Leu Ala Pro Asp
 1 5 10 15

Thr Val Ile Lys Leu Glu Pro Val Leu Lys Gln Lys Glu Ala Lys Glu
 20 25 30
 Ser Ser Phe Thr Ser Ser Tyr Ser Phe Ala Met Ala Asn Thr Tyr Ala
 35 40 45
 Phe Thr Pro Leu Tyr Ser Ser Glu Thr Val Ser Phe Leu Arg Pro Leu
 50 55 60
 Ala Arg Arg Ala Ala Asn Thr Leu Arg Pro Leu Ala Val Ala Ile Leu
 65 70 75 80
 Ser Arg Lys Pro Cys Leu Phe Phe Leu Phe Leu Leu Glu Gly
 85 90

<210> 8819
 <211> 627
 <212> PRT
 <213> B.fragilis

<400> 8819

Gln Ile Lys Ser Ser Ser Met Asn Arg Arg Leu Ser Ile Phe Val Ile
 1 5 10 15
 Ile Leu Phe Phe Leu Leu Pro Val Ala Ala Arg Ala Gln Val Thr Gly
 20 25 30
 Ser Phe Arg Phe Ala Gln Leu Thr Asp Ile His Leu Asn Pro Asn Asn
 35 40 45
 Pro Lys Pro Thr Glu Asp Leu Lys Arg Ser Val Glu Gln Ile Asn Ala
 50 55 60
 Thr Pro Gly Val Asp Phe Val Leu Val Thr Gly Asp Leu Thr Glu Glu
 65 70 75 80
 Gly Asp Arg Thr Thr Met Leu Val Val Lys Ser Ile Leu Asp Arg Leu
 85 90 95
 Lys Val Lys Tyr Tyr Val Ile Pro Gly Asn His Glu Thr Lys Trp Ser
 100 105 110
 Asp Ser Gly Cys Thr Ala Phe Ser Glu Ile Phe Gly Gly Glu Arg Phe
 115 120 125
 Lys Phe Glu His Lys Gly Phe Leu Phe Leu Gly Phe Asn Ser Gly Pro
 130 135 140
 Leu Met Arg Met Ala Tyr Gly His Val Val Pro Gln Asp Ile Thr Trp
 145 150 155 160
 Met Lys Gln Glu Met Asp Lys Val Gly Lys Asp Lys Pro Val Ile Leu
 165 170 175
 Val Thr His Tyr Pro Met Gln Asp Gly Asp Val Asp Asn Trp Tyr Asp
 180 185 190
 Val Thr Asp Ala Val Arg Pro Tyr Asn Ile Arg Thr Phe Ile Gly Gly
 195 200 205
 His Tyr His Arg Asn Arg Phe Leu Ser Tyr Asp Gly Ile Pro Gly Ile
 210 215 220
 Leu Thr Arg Ser Asn Leu Arg Asp Lys Asn Gly Ser Ser Gly Tyr Ser
 225 230 235 240
 Ile Phe Asp Ile Thr Pro Asp Ser Ile Ile Thr Tyr Glu Gln Arg Ile
 245 250 255
 Asp Glu Pro Met Lys Arg Trp Thr Ala Leu Ser Leu Thr Lys Ser Tyr
 260 265 270
 Tyr Asn Arg Thr Gly Lys Ala Val Lys Tyr Pro Ser Phe Ser Val Asn
 275 280 285
 Lys Glu Tyr Pro Gln Val Lys Ile Gly Trp Gln Val Gln Thr Gly Val
 290 295 300
 Gly Ile Tyr Cys Ser Pro Ala Leu Trp Lys Gly Arg Val Tyr Val Gly
 305 310 315 320
 Asp Asp Leu Gly Phe Leu Thr Cys Tyr Thr Leu Lys Glu Gly Arg Lys
 325 330 335

8819
 627
 PRT
 B.fragilis

Leu Trp Ser Phe Glu Ser Gly Lys Arg Ile Val Gly Thr Pro Ala Ala
 340 345 350
 Thr Asp Gly Ile Val Val Phe Gly Ser Ala Asp His Asn Ile Tyr Gly
 355 360 365
 Leu Asp Ala Val Thr Gly Lys Glu Arg Trp Arg Val Thr Val Ala Gln
 370 375 380
 Pro Val Leu Gly Ala Val Thr Ile Glu Lys Gly Ile Ala Tyr Ile Gly
 385 390 395 400
 Gly Ser Asp Ser Thr Phe Arg Ala Ile Arg Ile Lys Asn Gly Lys Val
 405 410 415
 Val Trp Thr Tyr Thr Gly Ile Lys Gly Tyr Ile Glu Thr Lys Pro Leu
 420 425 430
 Val Glu Gly Asp Lys Val Ile Phe Gly Ala Trp Asp Asn Thr Leu Tyr
 435 440 445
 Ala Leu Asn Lys Ser Asn Gly Lys Glu Leu Trp Lys Trp Thr Gly Gly
 450 455 460
 Leu Thr Arg Met His Phe Ser Pro Ala Ala Val Trp Pro Val Ala Ala
 465 470 475 480
 His Gly Lys Val Phe Ile Thr Asp Pro Gln Arg Ala Met Thr Ala Ile
 485 490 495
 Ser Leu Lys Thr Gly Lys Thr Val Trp Arg Thr Phe Gln Ser Met Val
 500 505 510
 Arg Glu Thr Ile Gly Leu Ser Ala Asn Lys Asn Gln Ile Tyr Ser Lys
 515 520 525
 Thr Met Asn Asp Ser Val Val Cys Tyr Ser Thr Ile Ser Asp Thr Pro
 530 535 540
 Lys Glu Ile Trp Ala Ser Asn Val Gly Phe Gly Tyr Glu His Ala Pro
 545 550 555 560
 Ser Met Gln Met Glu Lys Asp Gly Ile Val Phe Ser Ser Thr Lys Glu
 565 570 575
 Gly Leu Ile Phe Ala Leu Asp Ala Ser Thr Gly Gln Val Leu Trp Lys
 580 585 590
 His Lys Ile Gly Asn Ser Leu Ile Asn Thr Val Leu Pro Ile Ser Arg
 595 600 605
 His Gln Val Leu Phe Thr Ala Thr Ser Gly Glu Thr Gly Leu Leu Glu
 610 615 620
 Trp Lys Glu
 625

<210> 8820

<211> 307

<212> PRT

<213> B.fragilis

<400> 8820

Lys Asn Phe Pro Ile Lys Thr Asn Gln Ile Thr Lys Asn Ile Ile Tyr
 1 5 10 15
 Leu Tyr Pro Asn Gln Lys Gly Cys Glu Met Lys Leu Ile Ala Glu Ser
 20 25 30
 Gly Ser Thr Arg Thr Glu Trp Ala Leu Val Glu Asp Asn His Leu Val
 35 40 45
 Gln Arg Val Phe Thr Glu Gly Leu Asn Pro Phe Phe Gln Thr Arg Arg
 50 55 60
 Glu Ile Ser Arg Ser Val Arg Leu Gly Leu Pro Glu Ser Phe Phe Lys
 65 70 75 80
 Lys Lys Leu Asp Gln Val Tyr Tyr Tyr Gly Ala Gly Cys Ser Ser Tyr
 85 90 95
 Glu Lys Lys Asn Ile Leu Gly Ala Ser Leu Val Ala Gln Phe Lys Thr
 100 105 110

Pro Ile Gln Val Glu Ser Asp Leu Leu Ala Ala Ala Arg Gly Leu Phe
 115 120 125
 Lys Cys Glu Ala Gly Ile Ala Cys Ile Leu Gly Thr Gly Ser Asn Ser
 130 135 140
 Cys Phe Tyr Asp Gly Lys Ile Ile Val Lys Asn Val Lys Ala Ala Gly
 145 150 155 160
 Tyr Ile Leu Gly Asp Glu Gly Ser Gly Ala Val Leu Gly Lys Leu Phe
 165 170 175
 Leu Ala Asp Leu Leu Lys Gly Leu Ala Pro Lys Glu Leu Ala Asn Glu
 180 185 190
 Phe His Glu Lys Phe Arg Ile Ser Val Asn Asp Val Met Glu Ser Val
 195 200 205
 Tyr Asn Leu Pro Phe Pro Asn Arg Phe Leu Gly Thr Ile Ala Tyr Phe
 210 215 220
 Leu Gly Asp Tyr Met Asp Asn Glu Tyr Val Tyr Asn Leu Leu Thr Asn
 225 230 235 240
 Asn Leu Arg Ser Phe Phe Asn Arg Asn Val Cys Gln Tyr Asp Tyr Ile
 245 250 255
 Asn Tyr Pro Ile Arg Phe Val Gly Ser Leu Ala Tyr Ala Tyr Pro Asp
 260 265 270
 Ile Leu Gln Glu Val Ala Gln Glu Phe Gly Val Glu Ile Asp Val Ile
 275 280 285
 Glu Glu Thr Pro Met Asn Gly Leu Ile Glu Phe His Ser Met Asn Ile
 290 295 300
 Glu Glu Ser
 305

<210> 8821

<211> 258

<212> PRT

<213> B.fragilis

<400> 8821

Tyr Phe Ser Pro Val Phe Phe Glu Phe Gly Ile Lys Asp Phe Ile Asp
 1 5 10 15
 Ile Leu Leu Val Ala Phe Leu Leu Tyr Tyr Thr Tyr Lys Leu Met Lys
 20 25 30
 Ala Ser Gly Ser Ile Asn Val Phe Thr Gly Ile Leu Val Phe Ile Leu
 35 40 45
 Ile Trp Leu Val Val Ser Gln Val Leu Glu Met Lys Leu Leu Gly Ser
 50 55 60
 Ile Phe Asp Lys Leu Val Ser Val Gly Val Leu Ala Leu Ile Val Leu
 65 70 75 80
 Phe Gln Asp Glu Ile Arg Arg Phe Leu Leu Thr Leu Gly Ser His Gln
 85 90 95
 His Ala Ser Ala Leu Val Arg Phe Leu Thr Gly Asn Lys Lys Glu Lys
 100 105 110
 Leu Gln His Asp Asp Ile Met Pro Ile Val Met Ala Cys Ile Ser Met
 115 120 125
 Gly Lys Gln Lys Val Gly Ala Leu Ile Val Met Glu Arg Asn Val Pro
 130 135 140
 Leu Asp Asp Val Ile Arg Thr Gly Glu Ile Ile Asp Ala Asn Ile Asn
 145 150 155 160
 Gln Arg Leu Ile Glu Asn Ile Phe Phe Lys Asn Ser Pro Leu His Asp
 165 170 175
 Gly Ala Met Val Ile Ser Lys Lys Arg Ile Lys Ala Ala Gly Cys Ile
 180 185 190
 Leu Pro Val Ser His Asn Leu Asp Ile Pro Lys Glu Leu Gly Leu Arg
 195 200 205

His Arg Ala Ala Met Gly Ile Ser Gln Val Ser Asp Ala Leu Ala Ile
 210 215 220
 Ile Val Ser Glu Glu Thr Gly Ala Ile Ser Val Ala Trp Arg Gly Gln
 225 230 235 240
 Phe Tyr Leu Arg Gln Ser Ala Glu Glu Leu Glu Ser Leu Leu Thr Lys
 245 250 255
 Glu Ser

<210> 8822
 <211> 157
 <212> PRT
 <213> B.fragilis

<400> 8822
 Ser Ile Ser Phe Thr Phe Ser Leu Phe Phe Cys Ser Ser Pro Leu Leu
 1 5 10 15
 Asn Lys Asn Leu Arg Ala Leu Leu Val Ala Thr Leu Thr Leu Phe Phe
 20 25 30
 Ile Thr Leu Gln Arg Phe Gln Lys Ser Ile Gly Asn Ser Met Ile Arg
 35 40 45
 Gln Cys Ala Ile Leu Phe Gly Cys Leu Ala Leu Gly Glu Leu Ile Val
 50 55 60
 Tyr Leu Thr Gly Ile Lys Leu Pro Ser Ser Ile Ile Gly Met Leu Leu
 65 70 75 80
 Leu Thr Leu Phe Leu Lys Leu Gly Trp Ile Lys Leu His Trp Val Gln
 85 90 95
 Gly Met Ser Asp Phe Leu Val Ala Asn Leu Gly Phe Phe Phe Ile Pro
 100 105 110
 Pro Gly Val Ala Leu Met Leu Tyr Phe Asp Ile Ile Ala Ala Gln Phe
 115 120 125
 Trp Pro Ile Val Ile Ala Thr Leu Val Ser Thr Leu Leu Val Leu Val
 130 135 140
 Ile Thr Gly Trp Val His Gln Leu Thr Arg Lys Leu Lys
 145 150 155

<210> 8823
 <211> 633
 <212> PRT
 <213> B.fragilis

<400> 8823
 Pro Thr Ile Pro Leu Ser Met Glu Asn Lys Ile Asn Phe Ser Pro Pro
 1 5 10 15
 Ser Thr Arg Glu Gly Lys Gly Val Arg Phe Leu Leu Thr Thr Phe Ser
 20 25 30
 Ile Leu Leu Cys Ser Leu Gln Ala Val Ala Gln Ser Leu Pro Arg Val
 35 40 45
 Ala Pro Glu Gln Val Gly Met Asp Ser His Arg Leu Leu His Ala Asp
 50 55 60
 Glu Ala Ile His Arg Ala Ile Asp His Lys Glu Ile Pro Gly Ala Val
 65 70 75 80
 Leu Ala Val Ile Arg His Gly Lys Met Ala Tyr Leu Lys Ala Tyr Gly
 85 90 95
 Asn Lys Arg Ile Tyr Pro Asn Val Glu Pro Met Glu Ile Asn Thr Val
 100 105 110
 Phe Asp Met Ala Ser Cys Ser Lys Ser Met Ser Thr Ala Val Ser Val
 115 120 125
 Met Ile Leu Val Glu Arg Gly Gln Leu Arg Leu Leu Asp Arg Val Ser

130	Phe Tyr Leu Pro Asp	135	Phe Gln Glu Trp Arg Gly	140	Glu Asn Gly Glu Lys
145	Lys Asp Ile Arg Ile	150	Ile Asp Leu Met Thr His	155	Thr Ser Gly Leu Pro
	165		170		175
Pro Tyr Ala Pro Val Ser	Glu Leu Gln Glu Lys Tyr Gly		185		190
Pro Lys Gly Leu Ile Glu Tyr	Ile Ser Thr Cys Lys Arg Glu Phe Lys		200		205
	195		210		215
Pro Gln Thr Lys Phe Gln Tyr Ser Cys Leu Asn Tyr	Ile Thr Leu Gln		220		225
His Ile Ile Glu Thr Ile Thr Gly Gln Ser Leu Arg Asp	Phe Ala Lys		230		235
225	230		235		240
Glu Asn Ile Phe Asp Ile Leu Gly Met Gln Tyr Thr Asp Tyr	Leu Pro		245		250
	245		250		255
Thr Ile Gln Gln Gln Asp Gly Lys Trp Ile Asn Thr Val Ala Cys Pro			260		265
	260		265		270
Trp Met Asp Arg Ile Ala Pro Thr Glu Lys Gln Lys Asp Gly Ser Val			275		280
	275		280		285
Leu Cys Gly Gln Val His Asp Pro Leu Ala Arg Ile Leu Asn Gly Gly			290		295
	290		295		300
Ile Ser Gly Asn Ala Gly Ile Phe Ser Asn Ala Asn Asp Ile Gly Ile			305		310
	305		310		315
Leu Ala Ala Ala Leu Asn Gly Gly Glu Tyr Asn Gly His Arg Ile			315		320
	315		320		325
Leu Ser Pro Leu Gly Val Lys Thr Met Cys Thr Val Pro Arg Glu Leu			325		330
	325		330		335
	335		340		345
Thr Ala Phe Gly Arg Thr Pro Gly Trp Asp Ile Phe Ser Pro Tyr Ala			340		345
	340		345		350
Ser Asn Lys Gly Asp Leu Phe Ser Pro Asn Thr Phe Gly His Thr Gly			355		360
	355		360		365
Tyr Thr Gly Thr Ser Ile Ile Ile Asp Pro Asp Asn Asp Thr Ala Val			370		375
	370		375		380
385	390		395		400
Ile Leu Leu Val Asn Ala Val His Pro Glu Asp Arg His Ser Ile Val			405		410
	405		410		415
Arg Leu Arg Ser Leu Val Ala Asn Ala Val Ala Ala Ser Ile Cys Pro			420		425
	420		425		430
Pro Ala Gln Val Tyr Thr Asp His Tyr Tyr Lys Arg Phe Leu Gln Phe			435		440
	435		440		445
Glu Thr Glu Thr Pro Ile Ser Pro Lys Asp Ile Val Met Val Gly Asn			450		455
	450		455		460
Ser Leu Thr Glu Asn Gly Gly Asn Trp Ser Lys Arg Leu Asn Lys Lys			465		470
	465		470		475
Asn Ile Arg Asn Arg Gly Ile Ile Gly Asp Glu Ala Leu Gly Ile Cys			475		480
	475		480		485
Gln Arg Leu Phe Gln Ile Leu Pro Gly Thr Pro Gln Lys Leu Phe Leu			485		490
	485		490		495
	495		500		505
Met Ala Gly Ile Asn Asp Val Ser His Asp Leu Ser Thr Asp Ser Val			500		505
	500		505		510
Val Thr Leu Ile Thr Lys Val Ile Glu Lys Ile Gln Thr Glu Ser Pro			515		520
	515		520		525
Arg Thr Lys Leu Tyr Ile Gln Ser Leu Leu Pro Ile Asn Glu Ser Phe			530		535
	530		535		540
545	550		555		560
Gly Arg Tyr Lys Thr Met Ile Gly Lys Thr Asp Leu Ile Pro Glu Ile			550		555
	550		555		560
	560		565		570
Asn Arg Lys Leu Glu Ala Leu Ala Lys Glu Lys Lys Ile Pro Phe Ile			565		570
	565		570		575
	575		580		585
His Leu Phe Pro Leu Phe Thr Glu Lys Asn Ser Asn Val Met Arg Lys			580		585
	580		585		590
	590		595		600
	595		600		605

Glu Leu Thr Thr Asp Gly Leu His Leu Thr Glu Glu Gly Tyr Arg Ile
 610 615 620
 Trp Ser Lys Ala Leu Lys Arg Tyr Leu
 625 630

<210> 8824
 <211> 110
 <212> PRT
 <213> B.fragilis

<400> 8824
 Leu Cys Gln Pro His Ala Leu Ser Gly Gln Cys His His His Arg Arg
 1 5 10 15
 Pro Lys Pro Glu Arg Phe Gly Tyr Ala Phe Tyr Phe Arg Thr Ala Gln
 20 25 30
 Arg Met Glu Arg Pro Phe Phe Ser Arg Pro His Phe Asp Ala Glu Met
 35 40 45
 Asn Thr Met Ser Leu Ala Phe Glu Pro Asp Phe Lys Ala Ile Phe Phe
 50 55 60
 Pro Lys Ile Asp Phe Glu Gly Lys Ile Pro Leu Phe Lys Arg Ala Arg
 65 70 75 80
 Lys Pro Leu Lys Asp Lys Ile Phe Ser Pro Lys Val Pro Lys Ser Gln
 85 90 95
 Asp Lys Phe Phe Ser His Val Gly Val Leu Thr Pro Phe
 100 105 110

<210> 8825
 <211> 82
 <212> PRT
 <213> B.fragilis

<400> 8825
 Phe Gln Gln Phe Val Gly Leu Phe Leu Glu Glu Glu Val Leu Leu His
 1 5 10 15
 Arg His Phe Arg Ala Leu Glu Gln Glu Met Glu Val His Asn Ser Glu
 20 25 30
 Tyr Lys Gly Pro Leu Gln Ser Glu Arg Phe Val His Val Ala Ile Pro
 35 40 45
 Ser Glu Pro Ile Trp Ile Arg Asn Lys Ser Arg Asp Phe Ala Ile Glu
 50 55 60
 Gln Cys Asp Gly Phe Ala Ile Arg Leu Trp Gly Tyr Lys Glu Gln Ile
 65 70 75 80
 Ile Gly

<210> 8826
 <211> 137
 <212> PRT
 <213> B.fragilis

<400> 8826
 Pro Leu Ile Thr Asn Tyr Met Ser Lys Met Asn Ser Met Leu Met Gly
 1 5 10 15
 Ile Cys Phe Leu Leu Ser Ser Leu Phe Ser Cys Gln Gln Ser Lys Gly
 20 25 30
 Asp Phe Lys Thr Val Pro Val Lys Glu Phe Ala Ser Leu Ile Glu Asp
 35 40 45
 Ala Ser Val Gln Arg Leu Asp Val Arg Thr Met Ala Glu Tyr Ser Glu
 50 55 60

Gly His Ile Pro Gly Thr Ile Asn Ile Asn Val Leu Asp Asp Ser Phe
 65 70 75 80
 Ala Asp Ile Ala Asp Ser Thr Leu Gln Lys Asp Lys Pro Val Ala Leu
 85 90 95
 Tyr Cys Arg Ser Gly Lys Arg Ser Lys Lys Ala Ala Ala Ile Leu Ser
 100 105 110
 Glu Lys Gly Tyr Lys Val Tyr Glu Leu Asp Lys Gly Phe Asn Ala Trp
 115 120 125
 Gln Glu Ala Gly Glu Lys Val Glu Lys
 130 135

<210> 8827

<211> 307

<212> PRT

<213> B.fragilis

<400> 8827

Thr Gly Ala Thr Glu Ile Lys Met Trp Lys Asp Phe Phe Tyr Phe Thr
 1 5 10 15
 Arg Ala Glu Arg Gln Gly Ile Leu Ile Leu Ala Val Leu Cys Ile Leu
 20 25 30
 Val Phe Val Ala Gly Trp Leu Ile Pro Val Lys Glu Asn Thr Ala Lys
 35 40 45
 Asn Asn Thr Glu Lys Phe Lys Lys Glu Tyr Ala Gly Phe Met Ser Ser
 50 55 60
 Ile Arg Glu Lys Glu Gln Lys Ile Tyr Ser His Asn Asn Arg Phe Gln
 65 70 75 80
 Pro Pro Arg Thr Val Arg Leu Thr Thr Phe Asp Pro Asn Ile Thr Asp
 85 90 95
 Ser Val Gly Phe Leu Asp Leu Gly Leu Pro Ala Trp Met Ala Lys Asn
 100 105 110
 Ile Leu Lys Tyr Arg Asn Lys Gly Gly Lys Phe Arg Arg Ala Glu Asp
 115 120 125
 Phe Arg Lys Val Tyr Gly Leu Thr Gln Glu Gln Tyr Glu Met Leu Leu
 130 135 140
 Pro Tyr Ile His Ile Ala Thr Leu Ala Lys Pro Lys Asp Thr Leu Arg
 145 150 155 160
 Leu Tyr Thr Arg Lys Ile Glu Glu Asp Thr Leu Lys Phe Phe Lys Tyr
 165 170 175
 Ala Ala Gly Thr Val Val Glu Leu Asn Ser Ala Asp Thr Thr Glu Leu
 180 185 190
 Lys Lys Ile Pro Gly Ile Gly Ser Gly Ile Ala Arg Met Ile Thr Gly
 195 200 205
 Tyr Arg Asn Arg Leu Gly Gly Phe Tyr Asp Ile Ala Gln Leu Lys Glu
 210 215 220
 Ile His Leu Asp Val Glu Lys Leu Arg Pro Trp Phe Asn Val Ala Thr
 225 230 235 240
 Gly Asn Thr Arg Arg Leu Asn Ile Asn Arg Thr Gly Ile Glu Arg Leu
 245 250 255
 Lys Ala His Pro Tyr Ile Asn Phe Tyr Gln Ala Lys Ile Ile Val Glu
 260 265 270
 Tyr Arg Lys Lys Lys Gly Ile Leu Lys Ser Leu Lys Gln Leu Ser Leu
 275 280 285
 Tyr Glu Glu Phe Thr Pro Gln Asp Leu Glu Arg Ile Ser His Tyr Ile
 290 295 300
 Cys Phe Glu
 305

<210> 8828

<211> 391
 <212> PRT
 <213> B.fragilis

<400> 8828

Ile	Lys	Asn	Thr	Met	Asn	Gln	Thr	Val	Asn	Lys	Arg	Leu	Leu	Ala	Leu
1			5						10					15	
Asp	Val	Leu	Arg	Gly	Ile	Thr	Ile	Ala	Gly	Met	Ile	Met	Val	Asn	Asn
			20					25					30		
Pro	Gly	Ser	Trp	Ser	Tyr	Val	Tyr	Ala	Pro	Leu	Gly	His	Ala	Ala	Trp
		35					40					45			
Ile	Gly	Leu	Thr	Pro	Thr	Asp	Leu	Val	Phe	Pro	Phe	Phe	Met	Phe	Ile
	50					55					60				
Met	Gly	Ile	Ser	Thr	Tyr	Ile	Ser	Leu	Arg	Lys	Tyr	Asn	Phe	Glu	Phe
65					70					75				80	
Ser	His	Ser	Ala	Ala	Leu	Lys	Ile	Leu	Lys	Arg	Thr	Ile	Val	Ile	Phe
			85						90					95	
Ala	Ile	Gly	Leu	Gly	Ile	Ala	Trp	Phe	Ser	Met	Phe	Cys	Arg	Thr	Trp
			100					105					110		
Asn	Ser	Leu	Ser	Gly	Glu	Asp	Ile	Ser	Phe	Phe	Ser	Arg	Leu	Tyr	Glu
		115					120					125			
Ser	Val	Trp	Thr	Phe	Gly	His	Ile	Arg	Ile	Leu	Gly	Val	Met	Gln	Arg
	130					135					140				
Leu	Ala	Leu	Cys	Tyr	Gly	Ala	Thr	Ala	Ile	Ile	Ala	Leu	Ile	Met	Lys
145					150					155					160
His	Lys	Tyr	Ile	Pro	Tyr	Leu	Ile	Ala	Ile	Leu	Leu	Ile	Gly	Tyr	Phe
				165					170					175	
Ile	Ile	Leu	Ile	Asn	Gly	Asn	Gly	Phe	Glu	Tyr	Asn	Ser	Ser	Asn	Ile
			180					185					190		
Leu	Ser	Ile	Val	Asp	Arg	Thr	Val	Leu	Gly	Glu	Ala	His	Met	Tyr	Lys
		195					200					205			
Asp	Asn	Gly	Ile	Asp	Pro	Glu	Gly	Leu	Leu	Ser	Thr	Ile	Pro	Ser	Ile
	210					215					220				
Ala	His	Val	Leu	Ile	Gly	Phe	Cys	Val	Gly	Lys	Leu	Leu	Met	Glu	Val
225					230					235				240	
Lys	Asp	Ile	His	Glu	Lys	Ile	Glu	Arg	Leu	Phe	Leu	Ile	Gly	Thr	Ile
				245					250					255	
Leu	Thr	Phe	Ala	Gly	Phe	Leu	Leu	Ser	Tyr	Gly	Cys	Pro	Ile	Ser	Lys
			260					265					270		
Lys	Ile	Trp	Ser	Pro	Thr	Phe	Ala	Ile	Val	Thr	Cys	Gly	Leu	Ala	Ser
		275					280					285			
Ser	Phe	Leu	Ala	Leu	Leu	Val	Trp	Ile	Ile	Asp	Val	Arg	Gly	Tyr	Thr
	290					295					300				
Arg	Trp	Ser	Arg	Phe	Phe	Glu	Ser	Phe	Gly	Val	Asn	Pro	Leu	Phe	Ile
305					310					315				320	
Tyr	Val	Met	Gly	Ala	Val	Leu	Ser	Ile	Leu	Leu	Gly	Ser	Ile	Leu	Ile
				325					330					335	
Pro	Tyr	Asp	Gly	Gly	Ser	Ile	Ser	Leu	His	Gly	Phe	Val	Tyr	Asn	Ala
			340					345					350		
Ile	Leu	Gln	Pro	Val	Leu	Gly	Asp	Tyr	Pro	Gly	Ser	Leu	Ala	Phe	Ala
		355					360					365			
Ile	Leu	Phe	Val	Gly	Leu	Asn	Trp	Cys	Ile	Gly	Tyr	Ile	Leu	Tyr	Lys
	370					375					380				
Lys	Lys	Ile	Tyr	Ile	Lys	Ile									
385					390										

<210> 8829
 <211> 237
 <212> PRT

<213> B.fragilis

<400> 8829

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Arg Ile Leu Thr Thr Lys Asn Arg Ile Asp Met Lys Lys Ser Leu Leu
1      5      10      15
Ile Ser Val Phe Ala Thr Leu Ala Met Ile Ser Leu Asn Ala Leu
20      25      30
Ala Gln Glu Lys Ala Thr Gly Lys Ala Tyr Lys Ala Ile Gln Lys Asp
35      40      45
Glu Lys Val Ile Asn Lys Asp Leu Gln Lys Lys Ala Ile Lys Glu Ala
50      55      60
Arg Lys Gln Ala Lys Glu Leu Thr Lys Glu Gly Phe Lys Thr Pro Val
65      70      75      80
Gly Lys Leu Pro Leu Asp Lys Gln Leu Glu Asn Ser Trp Glu Lys Gln
85      90      95
Met Glu Ile Asp Met Asn Gly Asn Pro Tyr Trp Tyr Ile Ala Thr Ser
100     105     110
Arg Val Ile Gly Gly Asn Gln Ser Ala Ala Ala Met Gln Ala Thr Asn
115     120     125
Thr Ala Lys Ile Asp Ile Ala Gly Gln Val Gln Thr Lys Val Thr Gln
130     135     140
Leu Ile Glu Ser Lys Val Ala Asn Asp Asp Met Gly Gln Glu Glu Ala
145     150     155     160
Ala Ser Leu Ser Ser Ala Val Ala Ala Gly Lys Ser Ile Ile Ser Gly
165     170     175
Thr Leu Gly Arg Thr Ile Pro Leu Val Glu Val Tyr Arg Thr Leu Pro
180     185     190
Asn Lys Asn Val Glu Val Met Val Thr Ile Gly Tyr Ser Leu Glu Ala
195     200     205
Ala Asn Lys Val Ala Val Lys Ala Leu Ser Glu Glu Leu Ala Lys Lys
210     215     220
Ser Pro Glu Leu Ala Lys Glu Leu Asp Lys Leu Ala Gln
225     230     235

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<210> 8830

<211> 399

<212> PRT

<213> B.fragilis

<400> 8830

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Leu Pro Val Thr Arg Cys Ser Ser Leu Val Val Tyr Lys Arg Ile Lys
1      5      10      15
Ala Met Asn Thr Thr Glu Phe Asp Glu Ile Arg Pro Tyr Asn Asp Glu
20      25      30
Glu Leu Ser Gly Val Phe Glu Glu Leu Ile Ala Asp Pro Ala Phe Gln
35      40      45
Lys Val Val Ala Gly Val Ile Pro Asp Val Pro Phe Glu Met Leu Ala
50      55      60
Gln Lys Met Arg Ala Cys Arg Thr Lys Leu Glu Phe Gln Lys Thr Phe
65      70      75      80
Cys Tyr Gly Leu Leu Trp Lys Leu Ala Gly Asp Cys Thr Asp Gly Ile
85      90      95
Ser Leu Asp His Thr Ala Ile Pro Asp Lys Ser Lys Ala Tyr Thr Tyr
100     105     110
Ile Ser Asn His Arg Asp Ile Ile Leu Asp Ser Gly Phe Leu Ser Val
115     120     125
Leu Leu Val Asp Gln Gly Met Asp Thr Val Glu Ile Ala Ile Gly Asp
130     135     140
Asn Leu Leu Ile Tyr Pro Trp Ile Lys Lys Phe Val Arg Val Asn Lys

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145 150 155 160
 Ser Phe Ile Val Gln Arg Ala Leu Thr Met Arg Gln Met Leu Glu Ser
 165 170 175
 Ser Ala Arg Met Ser Arg Tyr Met His Tyr Ala Ile Gly Glu Lys Asn
 180 185 190
 Gln Ser Ile Trp Ile Ala Gln Arg Glu Gly Arg Ala Lys Asp Ser Asn
 195 200 205
 Asp Arg Thr Gln Asp Ser Val Leu Lys Met Leu Ala Met Gly Gly Glu
 210 215 220
 Gly Asp Val Val Ser Arg Leu Met Glu Met Asn Ile Ala Pro Leu Ala
 225 230 235 240
 Ile Ser Tyr Glu Tyr Asp Pro Cys Asp Tyr Leu Lys Ala Gln Glu Phe
 245 250 255
 Gln Leu Lys Arg Asp Ile Glu Gly Tyr Lys Lys Thr Met Ala Asp Asp
 260 265 270
 Leu Lys Asn Met Gln Thr Gly Leu Phe Gly Tyr Lys Gly Arg Val His
 275 280 285
 Phe Gln Thr Gly Ala Cys Leu Asn Asp Leu Leu Ser Thr Val Asp Arg
 290 295 300
 Ser Leu Pro Lys Pro Glu Leu Phe Ala Arg Ile Ser Thr Trp Ile Asp
 305 310 315 320
 Gln Arg Ile His Ser Asn Tyr Arg Leu Tyr Pro Gly Asn Tyr Val Ala
 325 330 335
 His Asp Leu Leu Thr Gly Lys Asn Asp Phe Glu Ser His Tyr Thr Leu
 340 345 350
 Ala Glu Lys Glu Arg Phe Glu Ala Tyr Val Glu Lys Gln Leu Glu Lys
 355 360 365
 Ile Glu Ile Pro Asn Lys Asp Ile Ser Phe Leu Arg Glu Lys Leu Leu
 370 375 380
 Leu Met Tyr Ala Asn Pro Leu Thr Asn Tyr Leu Ala Ala Arg Gln
 385 390 395

<210> 8831

<211> 295

<212> PRT

<213> B.fragilis

<400> 8831

Ser Met Val Ala Gly Arg Leu Tyr Arg Tyr Leu Asp Asp Asp Ser Gly
 1 5 10 15
 Ser Cys Leu Pro Val Cys Leu Val Thr Glu Lys Lys Gly Gly Gln His
 20 25 30
 Met Ser Trp Asp Gln Phe Val Ile Phe Ala Ile Val Ala Leu Leu Cys
 35 40 45
 Trp Gly Ile Gly Ala Val Ala Ala Trp Arg Gly Lys Arg Gln Trp Met
 50 55 60
 Val Tyr Thr Ala Thr Leu Ala Gly Leu Ala Val Phe Phe Ala Phe Ile
 65 70 75 80
 Leu Gly Met Trp Ile Ser Leu Glu Arg Pro Pro Met Arg Thr Met Gly
 85 90 95
 Glu Thr Arg Leu Trp Tyr Ser Phe Phe Leu Pro Leu Ala Gly Ile Ile
 100 105 110
 Thr Tyr Ser Arg Trp Arg Tyr Lys Trp Ile Leu Ser Phe Ser Phe Ile
 115 120 125
 Leu Ser Leu Val Phe Val Cys Ile Asn Leu Phe Lys Pro Glu Ile His
 130 135 140
 Asn Lys Thr Leu Met Pro Ala Leu Gln Ser Pro Trp Phe Ala Pro His
 145 150 155 160
 Val Ile Val Tyr Met Phe Ala Tyr Ala Met Leu Gly Ala Ala Ala Val

165 170 175
 Met Ala Val Tyr Leu Leu Trp Ile Lys Lys Lys Thr Pro Glu Glu Arg
 180 185 190
 Glu Met Glu Leu Cys Asp Asn Leu Val Asn Val Gly Leu Ala Phe Met
 195 200 205
 Thr Leu Gly Met Leu Phe Gly Ala Leu Trp Ala Lys Glu Ala Trp Gly
 210 215 220
 His Tyr Trp Ser Trp Asp Pro Lys Glu Thr Trp Ala Ala Ala Thr Trp
 225 230 235 240
 Leu Gly Tyr Leu Cys Tyr Ile His Phe Arg Met Asn Arg Arg Gln Lys
 245 250 255
 Val Arg Thr Ala Leu Val Gly Leu Leu Ile Cys Phe Val Leu Leu Gln
 260 265 270
 Met Cys Trp Tyr Gly Ile Asn Tyr Leu Pro Ser Ala Gln Gly Thr Ser
 275 280 285
 Val His Thr Tyr Asn Leu Asn
 290 295

<210> 8832
 <211> 71
 <212> PRT
 <213> B.fragilis

<400> 8832
 Asn Pro Ser Ala Ala Ile Ser Cys Val Ala Glu Leu Asn Ala Thr Ser
 1 5 10 15
 Gln Lys Met Ala Arg Val Val Trp Lys Lys Phe Asp Ile Gly Met Val
 20 25 30
 Lys Ala Ile Pro Ala Ser Pro Ala Pro Thr Asn Ser Cys Met Leu Thr
 35 40 45
 Ile His Gln Arg Leu Val Phe Asn Lys Ser Thr Asn Gly Leu Gln Lys
 50 55 60
 Gly Leu Ile Thr His Gly Lys
 65 70

<210> 8833
 <211> 263
 <212> PRT
 <213> B.fragilis

<400> 8833
 Asp Asn Tyr Phe Cys Phe Gly Ile Glu Ile Arg Ile Phe Ala Pro Leu
 1 5 10 15
 Phe Ser Gln Phe Pro Met Gln Lys Val Phe Leu Phe Leu Leu Phe
 20 25 30
 Leu Leu Pro Leu Ala Glu Val Pro Asn His Ala Pro Ala Ser Glu Pro
 35 40 45
 Val Ser Val Ala Ser Thr Pro Glu Thr Asp Glu Ile Asp Gln Leu Phe
 50 55 60
 Asp Asp Met Gln Leu Asp Gly Ile Val Ser Tyr Thr Ala Phe Arg Gln
 65 70 75 80
 Ala Val Thr Gly Tyr Arg Lys Ile Glu Gln Lys Ser Lys Ser Ile Met
 85 90 95
 Thr Leu Ile Asp Phe Ser Lys Pro Ser Thr Glu Lys Arg Leu Tyr Val
 100 105 110
 Leu Asp Met Lys Asn Lys Lys Leu Leu Tyr Thr Ser Val Val Ser His
 115 120 125
 Gly Lys Asn Ser Gly Gly Asn Tyr Ala Thr Ser Phe Ser Asn Lys Asn
 130 135 140

Gly Ser Tyr Lys Ser Ser Leu Gly Phe Tyr Leu Thr Glu Asn Thr Tyr
 145 150 155 160
 Gln Gly Arg Asn Gly Tyr Ser Leu Val Leu Asn Gly Leu Glu Lys Gly
 165 170 175
 Ile Asn Asp Gln Ala Lys Gln Arg Ala Ile Val Met His Gly Ala Ala
 180 185 190
 Tyr Ala Asn Pro Asn Ile Thr Ala Ser Ala Gly Arg Leu Gly Arg Ser
 195 200 205
 Leu Gly Cys Pro Ala Leu Pro Gln Ala Leu Ala Lys Pro Ile Ile Asp
 210 215 220
 Thr Ile Lys Lys Gly Ser Val Leu Phe Ile Tyr Ala Asn Asn Lys Asp
 225 230 235 240
 Tyr Leu Ala Asn Ser Thr Phe Leu Ser Pro Arg Gln Thr Glu Tyr Leu
 245 250 255
 Ser Trp Ala Gln Pro Ala Asn
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<210> 8834
 <211> 309
 <212> PRT
 <213> B.fragilis

<400> 8834
 Gln Lys Ser Ala Met Lys Asn Pro Ile Ile Tyr Arg Ile Leu Gln Gln
 1 5 10 15
 Gly Phe Cys Leu Ile Phe Cys Leu Gly Leu Leu Ser Ser Cys Ile Arg
 20 25 30
 Glu Glu Glu Phe Val Asn Asn Pro Gln Gly Asn Phe Glu Gln Leu Trp
 35 40 45
 Lys Ile Ile Asp Glu Gln Tyr Cys Phe Leu Asp Tyr Lys Gln Ile Asp
 50 55 60
 Trp Asp Glu Ile His Thr Arg Tyr Gln Lys Leu Ile Thr Pro Asn Met
 65 70 75 80
 Gly Ser Glu Gly Leu Phe Glu Val Leu Ser Glu Met Leu Tyr Glu Leu
 85 90 95
 Gln Asp Gly His Val Asn Leu Ala Ser Ala His Asn Val Ser Tyr Tyr
 100 105 110
 Asp Ala Trp Tyr Gln Asp Tyr Pro Arg Asn Phe Arg Ala Asp Leu Leu
 115 120 125
 Glu Asp Ser Tyr Leu Gly Arg Ala Ser Thr Asp Tyr Arg Thr Ala Ala
 130 135 140
 Gly Leu Lys Tyr Lys Ile Leu Lys Asp Asn Ile Gly Tyr Ile Arg Tyr
 145 150 155 160
 Glu Ser Phe Ala Asp Pro Val Gly Asn Gly Asn Leu Asp Glu Val Leu
 165 170 175
 Ser Tyr Leu Ser Val Cys Asn Gly Leu Ile Ile Asp Val Arg Asp Asn
 180 185 190
 Gly Gly Gly Asn Ala Thr Asn Ser Ala Arg Ile Ala Ser Arg Phe Thr
 195 200 205
 Asn Glu Lys Ile Leu Thr Gly Tyr Ile Ser His Lys Thr Gly Thr Gly
 210 215 220
 His Asn Asp Phe Ser Lys Pro Tyr Ala Ile Tyr Leu Glu Pro Ala Asn
 225 230 235 240
 Gly Val Arg Trp Gln Lys Lys Val Val Val Leu Thr Asn Arg Arg Ser
 245 250 255
 Phe Ser Ala Thr Asn Asp Phe Val Asn His Met Arg Cys Leu Ala Asn
 260 265 270
 Val Thr Thr Ile Gly Asp Gln Asn Arg Arg Gly Ser Gly Met Pro Phe
 275 280 285

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Thr Phe Glu Leu Pro Asn Gly Trp Ser Val Pro Phe Phe Pro Gly Pro
 290 295 300
 Ile Leu Met Arg Arg
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<210> 8835
 <211> 79
 <212> PRT
 <213> B.fragilis

<400> 8835
 Tyr Gln Leu Ala Leu Leu Ile Leu Leu Arg Asp Lys Leu Phe Ile Ile
 1 5 10 15
 Asn Lys Gly Leu Glu Thr Leu Trp Ser Ser Thr Met Ala Lys Ile Tyr
 20 25 30
 Phe Ile Leu Ile Ser Arg Thr Asn Ile Leu Tyr Asn Leu Asp Leu Tyr
 35 40 45
 Leu Tyr Ile His Ile Met Thr Leu Leu Cys Phe Ile Lys Met Ile Cys
 50 55 60
 Glu Tyr Ile Tyr Lys Arg Trp Phe Leu Arg Phe Arg Asn Ile Phe
 65 70 75

<210> 8836
 <211> 370
 <212> PRT
 <213> B.fragilis

<400> 8836
 Cys Ala Leu Tyr Leu Arg Gln Gln Gln Gly Leu Ser Gly Gln Gln His
 1 5 10 15
 Leu Pro Val Ser Thr Ala Asn Gly Val Ser Phe Met Gly Ala Ala Cys
 20 25 30
 Gln Leu Lys Ile Leu Ser Tyr Leu Cys Gly Lys Gly Ile Phe Ile Leu
 35 40 45
 Thr Lys Thr Ile Met Lys Lys Phe Thr Cys Val Gln Asp Ile Gly Asp
 50 55 60
 Leu Lys Ser Ala Leu Ala Glu Ser Phe Glu Ile Lys Lys Asp Arg Phe
 65 70 75 80
 Lys Tyr Val Glu Leu Gly Arg Asn Lys Thr Leu Leu Met Ile Phe Phe
 85 90 95
 Asn Ser Ser Leu Arg Thr Arg Leu Ser Thr Gln Lys Ala Ala Leu Asn
 100 105 110
 Leu Gly Met Asn Val Ile Val Leu Asp Ile Asn Gln Gly Ala Trp Lys
 115 120 125
 Leu Glu Thr Glu Arg Gly Val Ile Met Asp Gly Asp Lys Pro Glu His
 130 135 140
 Leu Leu Glu Ala Ile Pro Val Met Gly Cys Tyr Cys Asp Ile Ile Gly
 145 150 155 160
 Val Arg Ser Phe Ala Arg Phe Glu Asn Arg Glu Tyr Asp Tyr Asn Glu
 165 170 175
 Val Ile Ile Asn Gln Phe Ile Gln His Ser Gly Arg Pro Val Phe Ser
 180 185 190
 Met Glu Ala Ala Thr Arg His Pro Leu Gln Ser Phe Ala Asp Leu Ile
 195 200 205
 Thr Ile Glu Glu Tyr Lys Lys Thr Ala Arg Pro Lys Val Val Met Thr
 210 215 220
 Trp Ala Pro His Pro Arg Pro Leu Pro Gln Ala Val Pro Asn Ser Phe
 225 230 235 240
 Ala Glu Trp Met Asn Ala Thr Asp Tyr Glu Phe Val Ile Thr His Pro

245 250 255
 Glu Gly Tyr Glu Leu Asp Pro Lys Phe Val Gly Asn Ala Arg Val Glu
 260 265 270
 Tyr Asp Gln Met Lys Ala Phe Glu Gly Ala Asp Phe Ile Tyr Ala Lys
 275 280 285
 Asn Trp Ala Ala Tyr Thr Gly Asp Asn Tyr Gly Gln Ile Leu Ser Thr
 290 295 300
 Asp Arg Asn Trp Thr Val Gly Asp Arg Gln Met Ala Val Thr Asn Asn
 305 310 315 320
 Ala Tyr Phe Met His Cys Leu Pro Val Arg Arg Asn Met Ile Val Thr
 325 330 335
 Asp Asp Val Ile Glu Ser Pro Gln Ser Ile Val Ile Pro Glu Ala Ala
 340 345 350
 Asn Arg Glu Ile Ser Ala Thr Val Val Leu Lys Arg Leu Leu Glu Asn
 355 360 365
 Leu Pro
 370

<210> 8837
 <211> 208
 <212> PRT
 <213> B.fragilis

<400> 8837
 Ala Gly Asn Tyr Trp Ser Ala Tyr Tyr Arg Tyr Phe Phe His Phe Phe
 1 5 10 15
 Leu Phe Ile Thr Met Lys Gly Tyr Asn Ile Phe Phe Phe Ile Pro Leu
 20 25 30
 Leu Phe Leu Leu Leu Ser Leu His Ala Cys Thr Ser Lys Ser Lys Lys
 35 40 45
 Asp Met Glu Tyr Val Lys Gly Trp His Gly Lys Lys Ile Ser Leu Pro
 50 55 60
 Ser Glu Ser Asp Phe Leu Leu Phe Gly Arg Asp Ser Val Val Tyr Asp
 65 70 75 80
 Tyr Ser Ser Phe Pro Tyr Lys Ile Val Leu Val Ile Gly Lys Glu Gln
 85 90 95
 Cys Ile Ser Cys Lys Phe Asp Val Ala Lys Trp Gln Glu Leu Ile Gln
 100 105 110
 Gln Val Asp Ser Ile Thr Ser Phe Lys Val Gly Phe Val Phe Val Leu
 115 120 125
 Glu Pro Ile Tyr Gln His Asp Val Tyr Val Met Leu Arg Ser His Gln
 130 135 140
 Phe Met Thr Pro Val Phe Ile Asp Thr Asn Asn Thr Phe Arg Gly Met
 145 150 155 160
 Asn Lys Ile Ser Asp Asn Asp Ser His Val Trp Leu Leu Asp Ser Asn
 165 170 175
 Asn Arg Ile Ile Tyr Ile Gly Asp Pro Thr Val Asn Gln Lys Ile Asn
 180 185 190
 Lys Glu Tyr Met Glu Leu Val Arg Thr Asn Tyr Leu Phe Asn Asp Lys
 195 200 205

<210> 8838
 <211> 139
 <212> PRT
 <213> B.fragilis

<400> 8838
 Val Leu Asp Tyr Leu Cys Arg Asn Ile Asn Leu Phe Ile Met Lys Lys
 1 5 10 15


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<210> 8839
<211> 297
<212> PRT
<213> B.fragilis
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Ile	Phe	Leu	Tyr	Met	Lys	Thr	Ile	Ser	Lys	Leu	Phe	Leu	Leu	Leu	Ser
1				5					10					15	
Ile	Ile	Leu	Leu	Ser	Ser	Cys	Asp	Glu	Thr	Glu	Leu	Asp	Gln	Thr	Val
			20					25					30		
Thr	Asn	Gln	Val	Asn	Pro	Gln	Lys	Glu	Glu	Asp	Ser	Arg	Ile	Val	Phe
			35				40					45			
Asn	Ser	Ala	Lys	Glu	Phe	Tyr	Asn	Thr	Leu	Asp	Thr	Leu	Ser	Tyr	Met
			50			55					60				
Thr	Tyr	Glu	Glu	Gln	Thr	Glu	Trp	Ile	Arg	Ala	Ser	Gly	Ile	Lys	Tyr
65					70				75					80	
Pro	Leu	Tyr	Lys	Asp	Leu	Glu	Phe	Cys	Glu	Asp	Glu	Ile	Met	Thr	Glu
				85					90					95	
Met	Pro	Arg	Ala	Phe	Gln	Ala	Leu	Phe	Asn	His	Lys	Met	Glu	Met	Gln
			100					105					110		
Ile	Asn	Asp	Thr	Val	Ile	Ala	Phe	Glu	Lys	Gly	Asn	Met	Tyr	Val	Lys
			115				120					125			
Ser	Ile	Lys	Glu	Lys	Ile	Leu	Pro	Val	Pro	Val	Leu	Tyr	Gly	Gln	Val
			130			135					140				
Gly	Val	Asn	Gln	Glu	Glu	Ser	Glu	Val	Thr	Thr	Arg	Thr	Val	Tyr	Glu
145					150					155					160
Thr	Lys	Tyr	Gly	Lys	Ile	Gly	Thr	Ser	Tyr	Gln	Tyr	Glu	Phe	Lys	Ile
				165					170					175	
Pro	Glu	Gly	Lys	Ser	Lys	Tyr	Lys	Tyr	Val	His	Glu	Leu	Lys	Ser	Val
			180					185					190		
Ile	Ile	Lys	Glu	Asn	Leu	Pro	Pro	Tyr	Lys	Ser	Trp	Ser	Asn	Leu	Phe
			195				200					205			
Leu	Val	Leu	Lys	Leu	Glu	Trp	Lys	Gly	Lys	Lys	Lys	Trp	Lys	Val	Ala
			210			215					220				
Glu	Lys	Glu	Glu	Arg	Asn	Ile	Ser	Ile	Asp	Leu	Asn	Val	Cys	Lys	Arg
225					230					235				240	
Asn	Leu	Ala	Lys	Val	Lys	Tyr	Asn	Gln	Glu	Ile	Arg	Ile	Asp	Val	Gln
				245					250					255	
Asn	Met	Asp	Ser	Lys	Ser	His	Ser	Ile	Asn	Ile	Glu	Gly	Tyr	Ile	Ile
			260					265					270		
His	Glu	Val	Gly	Ile	Pro	Ser	Ser	Thr	Lys	Met	Phe	Asn	Gly	Trp	Ser
			275				280					285			

[illegible]

<400> 8840

<400> 8841

Asp	Arg	Ser	Gln	Leu	Trp	Gln	Glu	Ser	Arg	Gly	Tyr	Ser	Pro	Lys	Asn
1				5					10					15	
Lys	Ile	Asn	Pro	Phe	Leu	Phe	Thr	Gly	Tyr	Leu	Lys	His	Thr	Glu	Asn
			20					25					30		
Met	Thr	Tyr	Arg	Arg	Ser	Ile	Leu	Lys	Leu	Leu	Leu	Thr	Phe	Phe	Val
		35					40					45			
Phe	Met	Thr	Ser	Thr	Leu	Leu	Ser	Arg	Gly	Ala	Glu	Pro	Gly	Ala	Arg
	50					55					60				
Pro	Pro	Arg	Ile	Arg	Ile	Lys	Thr	Gly	Ile	Glu	Val	Leu	Lys	Glu	Gln
65					70					75				80	
Asn	Phe	Lys	Cys	Leu	Glu	Gly	Lys	Arg	Val	Gly	Leu	Ile	Thr	Asn	Pro

[illegible]

<400> 8842

Phe	Cys	Thr	His	Asn	Arg	Glu	Lys	Pro	Ile	Ile	Met	Lys	Leu	Ser	Ala
1				5					10					15	
Leu	Tyr	Gln	Ile	Phe	Leu	Asp	Cys	Ala	Val	Val	Thr	Thr	Asp	Ser	Arg
			20					25					30		
Asn	Cys	Pro	Ala	Gly	Ser	Leu	Phe	Ile	Ala	Leu	Lys	Gly	Glu	Ser	Phe

[illegible]

<213> B.fragilis

Leu Phe Asn His Ile Pro Ile Met Lys Gln Ser Leu Pro Tyr Gln Pro

1		5		10		15									
Gly	Pro	Ile	Gly	Val	Phe	Asp	Ser	Gly	Tyr	Gly	Gly	Leu	Thr	Ile	Leu
		20						25						30	
Ser	Lys	Ile	Arg	Glu	Ala	Leu	Pro	Glu	Tyr	Asp	Tyr	Ile	Tyr	Leu	Gly
		35						40						45	
Asp	Asn	Ala	Arg	Thr	Pro	Tyr	Gly	Thr	Arg	Ser	Phe	Glu	Ile	Val	Tyr
		50						55						60	
Glu	Phe	Thr	Leu	Gln	Ala	Val	Asn	Lys	Leu	Phe	Glu	Met	Gly	Cys	His
65						70									80
Leu	Val	Ile	Leu	Ala	Cys	Asn	Thr	Ala	Ser	Ala	Lys	Ala	Leu	Arg	Thr
						85									95
Ile	Gln	Met	Asn	Asp	Leu	Pro	Asn	Ile	Asp	Pro	Asp	Arg	Arg	Val	Leu
						100									110
Gly	Val	Ile	Arg	Pro	Thr	Ala	Glu	Cys	Ile	Gly	Ser	Met	Thr	Gln	Thr
		115													125
Arg	His	Val	Gly	Ile	Leu	Ala	Thr	Ala	Gly	Thr	Ile	Lys	Ser	Glu	Ser
		130													140
Tyr	Pro	Leu	Glu	Val	His	Lys	Leu	Phe	Glu	Asp	Ile	Lys	Val	Ser	Gly
145						150									160
Glu	Ala	Cys	Pro	Met	Trp	Val	Pro	Leu	Val	Glu	Asn	Asn	Glu	Ala	Asn
						165									175
Gly	Glu	Gly	Ala	Asp	Phe	Phe	Ile	Arg	Lys	Tyr	Ile	Asp	Asn	Leu	Leu
						180									190
Ala	Lys	Asp	Arg	Gln	Ile	Asp	Thr	Leu	Val	Leu	Gly	Cys	Thr	His	Tyr
						195									205
Pro	Ile	Leu	Leu	Pro	Lys	Ile	Gln	Lys	Phe	Ile	Pro	Gln	Gly	Val	Lys
						210									220
Val	Val	Ala	Gln	Gly	Glu	Tyr	Val	Ala	Thr	Ser	Leu	Lys	Asp	Tyr	Leu
225						230									240
His	Arg	His	Pro	Glu	Met	Asp	Met	Lys	Cys	Thr	Arg	Glu	Gly	Lys	Cys
						245									255
Arg	Phe	Tyr	Thr	Thr	Glu	Ala	Glu	Asp	Lys	Phe	Ile	Glu	Ser	Ala	Ser
						260									270
Met	Phe	Leu	Asn	Glu	Asn	Ile	Thr	Val	Gln	Arg	Ile	Thr	Leu	Glu	
						275									285

<210> 8844

<211> 459

<212> PRT

<213> B.fragilis

<400> 8844

His	Ile	Leu	Phe	Met	Thr	Lys	Lys	Glu	Arg	Gly	Asn	Phe	Gly	Ser	Lys
1				5					10					15	
Leu	Gly	Val	Ile	Leu	Ala	Ser	Ala	Gly	Ser	Ala	Val	Gly	Leu	Gly	Asn
				20					25					30	
Ile	Trp	Arg	Phe	Pro	Tyr	Glu	Thr	Gly	Asn	His	Gly	Gly	Ala	Ala	Phe
						35			40					45	
Ile	Leu	Ile	Tyr	Leu	Gly	Cys	Ile	Leu	Leu	Leu	Gly	Leu	Pro	Ile	Met
						50								60	
Ile	Ala	Glu	Phe	Leu	Ile	Gly	Arg	His	Ser	Gln	Ala	Asn	Thr	Ala	Arg
65						70									80
Ala	Tyr	Gln	Ile	Leu	Ala	Pro	Gly	Thr	Gln	Trp	Arg	Trp	Val	Gly	Arg
						85									95
Met	Gly	Val	Leu	Ala	Gly	Phe	Leu	Ile	Leu	Gly	Tyr	Tyr	Ser	Val	Val
						100									110
Ala	Gly	Trp	Thr	Leu	Glu	Tyr	Ile	Phe	Glu	Ala	Val	Ser	Asn	Ser	Phe
						115									125
Ala	Gly	Lys	Thr	Pro	Ala	Glu	Phe	Ile	Ser	Ser	Phe	Gln	Ser	Phe	Ser

130		135		140
Ser Asn Pro Trp Arg	Pro Ala Leu Trp Leu Thr	Leu Phe Leu Leu Ala		
145	150	155	160	
Thr His Phe Ile Ile	Val Lys Gly Val Glu Lys Gly	Ile Glu Lys Ser		
	165	170	175	
Ser Lys Ile Met Met	Pro Thr Leu Phe Ile Ile	Ile Leu Ile Leu Val		
	180	185	190	
Gly Cys Ser Val Thr	Leu Pro Gly Ala Gly Lys Gly	Ile Glu Phe Leu		
	195	200	205	
Leu Lys Pro Asp Phe	Ser Lys Val Asp Gly Asn Val	Phe Leu Gly Ala		
	210	215	220	
Met Gly Gln Ala Phe	Phe Ser Leu Ser Leu Gly Met	Gly Cys Leu Cys		
	225	230	235	
Thr Tyr Ala Ser Tyr	Phe Ser Lys Asn Thr Asn	Leu Thr Arg Thr Ala		
	245	250	255	
Phe Ser Val Gly Ile	Ile Asp Thr Phe Val Ala Val	Leu Ala Gly Phe		
	260	265	270	
Ile Ile Phe Pro Ala	Ala Phe Ser Val Gly Ile Gln	Pro Asp Ala Gly		
	275	280	285	
Pro Ser Leu Ile Phe	Ile Thr Leu Pro Asn Val Phe	Gln Gln Ala Phe		
	290	295	300	
Ser Gly Ile Pro Ile	Leu Ala Tyr Ile Phe Ser	Val Met Phe Tyr Val		
	305	310	315	
Leu Leu Ala Leu Ala	Leu Thr Ser Thr Ile Ser	Leu His Glu Val		
	325	330	335	
Val Thr Ala Tyr Leu	His Glu Glu Phe Asn Phe Thr	Arg Gly Lys Ala		
	340	345	350	
Ala Arg Leu Val Thr	Thr Gly Cys Ile Leu Leu Gly	Ile Leu Cys Ser		
	355	360	365	
Leu Ser Leu Gly Val	Thr Lys Glu Phe Thr Ile Phe	Gly Leu Gly Met		
	370	375	380	
Phe Asp Leu Phe Asp	Phe Val Thr Ala Lys Leu Met	Leu Pro Leu Gly		
	385	390	395	
Gly Leu Leu Ile Ser	Ile Phe Thr Gly Trp Tyr Leu	Asp Lys Lys Leu		
	405	410	415	
Val Trp Ser Glu Ile	Thr Asn Asn Gly Thr Leu Lys	Val Pro Thr Tyr		
	420	425	430	
Lys Leu Ile Ile Phe	Ile Leu Lys Tyr Val Ala Pro	Ile Ala Ile Ser		
	435	440	445	
Val Ile Phe Ile Asn	Glu Leu Gly Leu Leu Lys			
	450	455		

<210> 8845

<211> 1121

<212> PRT

<213> B.fragilis

<400> 8845

Lys Thr Lys Gln Leu	Asn His Leu Ser Phe Met	Asn Glu Asp Arg Lys
1	5	10
Lys Arg Gly Leu Ala	Asn Ser Asn Leu Leu Ile	Ala Met Ala Ile Thr
	20	25
Ala Leu Ile Ile Gly	Ser Ser Asn Ala Met	Ala Asn Gln Thr Ala Ser
	35	40
Gly Ser Ser Tyr Lys	Val Thr Glu Gln Met	Gln Ile Gln Thr Val Thr
	50	55
Gly Val Val Val Asp	Ala Asn Gly Glu Pro Ile	Ile Gly Ala Ser Val
	65	70
Val Glu Lys Gly Thr	Thr Asn Gly Ile Val Thr	Asp Met Asp Gly Lys
	75	80

				85					90					95			
Phe	Ser	Leu	Asn	Val	Lys	Val	Gly	Thr	Thr	Leu	Gln	Ile	Thr	Phe	Val		
			100						105					110			
Gly	Tyr	Gln	Pro	Gln	Asp	Val	Lys	Ala	Thr	Lys	Ser	Met	Lys	Val	Val		
		115					120					125					
Leu	Lys	Glu	Asp	Asn	Glu	Leu	Leu	Asp	Glu	Val	Val	Val	Val	Gly	Tyr		
	130					135					140						
Gly	Thr	Gln	Lys	Lys	Ala	Asn	Leu	Thr	Gly	Ala	Val	Ser	Thr	Val	Asp		
145					150					155					160		
Val	Ser	Lys	Thr	Leu	Glu	Ala	Arg	Pro	Gln	Ser	Asp	Val	Ser	Lys	Ala		
				165					170						175		
Leu	Gln	Gly	Val	Val	Pro	Gly	Leu	Thr	Ile	Thr	Asn	Thr	Ser	Gly	Lys		
			180						185					190			
Leu	Asn	Ser	Lys	Pro	Thr	Met	Thr	Ile	Arg	Gly	Thr	Gly	Thr	Leu	Ser		
	195						200					205					
Asn	Ser	Ala	Thr	Ser	Asn	Pro	Leu	Ile	Val	Val	Asp	Gly	Val	Pro	Met		
	210					215					220						
Asp	Asp	Ile	Ser	Tyr	Leu	Asn	Thr	Gln	Asp	Ile	Asp	Asn	Ile	Ser	Val		
225					230					235					240		
Leu	Lys	Asp	Ala	Ala	Ser	Thr	Ser	Ile	Tyr	Gly	Thr	Arg	Ala	Ala	Phe		
			245						250					255			
Gly	Val	Ile	Leu	Val	Thr	Thr	Lys	Ser	Ala	Lys	Lys	Thr	Asp	Lys	Val		
		260						265					270				
Thr	Ile	Asn	Tyr	Thr	Asn	Asn	Phe	Ser	Trp	Asp	Thr	Pro	Thr	Ile	Leu		
	275						280					285					
Pro	Asn	Tyr	Pro	Asp	Val	Ala	Thr	Gln	Ala	Arg	Ala	Leu	Arg	Ala	Ala		
	290					295					300						
Asn	Thr	Arg	Ala	Asn	Leu	Glu	Asn	Glu	Leu	Phe	Gly	Met	Tyr	Met	Asp		
305					310					315					320		
Asp	Asn	Phe	Ile	Ala	Lys	Ala	Glu	Ala	Trp	Lys	Gln	Arg	His	Gly	Gly		
			325						330					335			
Lys	Lys	Ala	Gly	Tyr	Arg	Glu	Met	Ile	Pro	Gly	Asp	Asp	Phe	Asp	Leu		
		340					345						350				
Gly	Glu	Asp	Gly	Ser	Ala	Leu	Tyr	Tyr	Ala	Asp	Trp	Asp	Val	Val	Gly		
	355						360					365					
Ile	Met	Phe	Arg	Asp	Trp	Lys	Pro	Ala	Gln	Ser	His	Asn	Ile	Ser	Ile		
	370					375					380						
Gln	Gly	Thr	Ser	Gly	Lys	Thr	Ser	Tyr	Phe	Leu	Ser	Val	Gly	Tyr	Asn		
385					390					395					400		
His	Glu	Glu	Gly	Val	Met	Thr	Phe	Asn	Pro	Asp	Lys	Leu	Asn	Lys	Tyr		
			405						410					415			
Asn	Ala	Asn	Met	Asn	Val	Thr	Ser	Asp	Ile	Thr	Asn	Trp	Leu	Gln	Ile		
			420					425					430				
Gly	Gly	Arg	Phe	Ser	Tyr	Ser	Asp	Lys	Ala	Tyr	Thr	Thr	Pro	Asn	Thr		
		435					440					445					
Arg	Arg	Asn	Thr	Tyr	Thr	Tyr	Met	Trp	Arg	Trp	Gly	Ser	Phe	Phe	Gly		
	450					455					460						
Pro	Tyr	Gly	Thr	Tyr	Gln	Gly	Ile	Asp	Met	Lys	Asn	Asp	Ile	Ala	Tyr		
465					470					475					480		
Leu	Lys	Gln	Ala	Gly	Asp	Asp	Lys	Thr	Asn	Asp	Ser	Tyr	Thr	Arg	Ile		
			485						490					495			
Gly	Ala	Phe	Leu	Lys	Ala	Thr	Ile	Ile	Lys	Gly	Leu	Thr	Leu	Asn	Ala		
		500						505					510				
Asp	Tyr	Thr	Phe	Asn	Ile	Asn	Asn	Lys	Thr	Thr	Lys	Ser	Val	Gly	Leu		
	515						520					525					
Pro	Val	Ile	Cys	Trp	Asn	Ser	Trp	Gly	Gly	Lys	Leu	Asn	Thr	Pro	Thr		
	530					535					540						
Thr	Ala	Ala	Gly	Ala	Asn	Gly	Asp	Thr	Trp	Val	Tyr	Gln	Asn	Ser	Val		
545					550					555					560		

Arg	Asp	Asn	Ser	Tyr 565	Ala	Leu	Asn	Val	Phe 570	Ala	Asn	Tyr	Glu	Leu	Thr
Val	Ala	Lys	Asp	His 580	His	Phe	Asn	Phe 585	Met	Ile	Gly	Ala	Asn	Ala	Glu
Glu	Gly	Glu	Tyr	Gln 595	Asn	His	Trp	Ser 600	Gln	Arg	Lys	Gly	Leu	Leu	Asp
Asp	Lys	Leu	Pro	Glu 610	Phe	Asn	Leu	Ala 615	Thr	Gly	Asp	Gln	Thr	Val	Gly
Gly	Thr	His	Asn	Glu 625	Trp	Gly	Thr	Ala 630	Gly	Trp	Phe	Gly	Arg	Ile	Asn
Tyr	Asp	Tyr	Asn	Gly 645	Ile	Trp	Leu	Leu 650	Glu	Leu	Asn	Gly	Arg	Tyr	Asp
Gly	Ser	Ser	Lys	Phe 660	Pro	Ser	Ser	Asp 665	Arg	Trp	Ala	Phe	Phe	Pro	Ser
Gly	Ser	Val	Gly	Tyr 675	Arg	Ile	Ser	Glu 680	Glu	Lys	Phe	Phe	Glu	Pro	Ile
Lys	Lys	Ile	Val	Ser 690	Asn	Thr	Lys	Ile 695	Arg	Ala	Ser	Tyr	Gly	Glu	Ile
Gly	Asn	Gln	Ala	Val 705	Gly	Ser	Asn	Met 710	Tyr	Ile	Ser	Thr	Val	Ser	Lys
Arg	Thr	Asp	Gly	Asn 725	Thr	His	Trp	Leu 730	Asn	Gly	Ser	Asn	Lys	Val	Val
Ala	Tyr	Asp	Leu	Pro 740	Ser	Leu	Val	Ser 745	Pro	Thr	Leu	Lys	Trp	Glu	Arg
Ile	Gln	Thr	Leu	Asp 755	Ile	Gly	Gly	Asp 760	Phe	Gly	Phe	Phe	Asn	Asn	Glu
Leu	Asn	Ile	Ser	Phe 770	Asp	Trp	Tyr	Gln 775	Arg	Thr	Thr	Lys	Asp	Met	Leu
Ala	Pro	Gly	Gln	Thr 785	Met	Pro	Asp	Val 790	Leu	Gly	Ala	Gly	Ala	Pro	Lys
Ile	Asn	Ala	Gly	Thr 805	Leu	Arg	Thr	Arg 810	Gly	Trp	Glu	Leu	Ser	Ile	Asp
Trp	Arg	His	His	Phe 820	Asn	Glu	Ile	Asn 825	Val	Tyr	Ala	Asn	Ala	Ser	Ile
Gly	Asp	Phe	Lys	Thr 835	Val	Ile	Thr	Lys 840	Trp	Asp	Asn	Asp	Ser	Gln	Leu
Leu	Asn	Glu	Asn	Tyr 850	Ser	Gly	Lys	Val 855	Tyr	Gly	Asp	Ile	Trp	Gly	Phe
Glu	Thr	Asp	Arg	Tyr 865	Phe	Thr	Lys	Asp 870	Asp	Phe	Asn	Ala	Asp	Gly	Ser
Tyr	Lys	Glu	Gly	Ile 885	Ala	Ser	Gln	Lys 890	Lys	Leu	Glu	Gln	Asp	Gly	Phe
Val	Tyr	Gly	Pro	Gly 900	Asp	Ile	Lys	Phe 905	Lys	Asp	Leu	Asn	Asn	Asp	Lys
Glu	Ile	Asn	Gly	Gly 915	Glu	Gly	Thr	Val 920	Lys	Asp	His	Gly	Asp	Leu	Lys
Val	Ile	Gly	Asn	Thr 930	Thr	Pro	Arg	Tyr 935	Gln	Tyr	Gly	Phe	Arg	Leu	Gly
Gly	Glu	Trp	Lys	Gly 945	Ile	Asp	Ile	Asp 950	Met	Phe	Phe	Gln	Gly	Val	Gly
Lys	Cys	Asp	Ala	Trp 965	Thr	Gln	Ser	Ala 970	Phe	Val	Met	Pro	Met	Met	Arg
Gly	Ala	Asp	Ala	Ile 980	Tyr	Ala	Asn	Gln 985	Ala	Asn	Tyr	Trp	Thr	Asp	Glu
Asn	Pro	Asp	Pro	Asn 995	Ala	Asp	Phe	Pro 1000	Arg	Met	Trp	Pro	Gly	Asn	Ala
Gly	Lys	Gly	Thr	Val 1010	Ser	Val	Leu	Asp 1015	Leu	Gly	Asn	His	Asn	Phe	Tyr
Pro	Gln	Ser	Lys	Tyr	Leu	Val	Asn	Met	Ala	Tyr	Leu	Arg	Phe	Lys	Asn

1025 1030 1035 1040
 Leu Thr Ile Gly Tyr Thr Leu Pro Lys Asp Trp Thr Arg Lys Val Tyr
 1045 1050 1055
 Met Asp Lys Val Arg Val Tyr Phe Ser Ala Asn Asn Ile Cys Glu Leu
 1060 1065 1070
 Ile Asn Lys Ser Asn Ala Pro Val Asp Pro Glu Val Asn Thr Ser Glu
 1075 1080 1085
 Ala Ile Ala Asn Gly Gly Ser Ser Asp Tyr Gly Asn Gly Thr Trp Gly
 1090 1095 1100
 Arg Val Asp Pro Met Tyr Arg Thr Val Ser Phe Gly Leu Gln Val Thr
 1105 1110 1115 1120
 Phe

<210> 8846
 <211> 175
 <212> PRT
 <213> B.fragilis

<400> 8846
 Thr Met Trp Gln Lys Pro Trp Gly Tyr Lys Glu Gly Phe Ala Ile Cys
 1 5 10 15
 Gly Gly Leu Phe Leu Thr Gly Thr Phe Leu Gln Ile Thr Ile Gly Lys
 20 25 30
 Cys Glu Leu Ser Ile Leu Ser Tyr Pro Met Asn Val Cys Val Gly Val
 35 40 45
 Leu Tyr Leu Val Ile Leu Leu Leu Ile Tyr Ala Phe Ser Gln Lys Ser
 50 55 60
 Tyr Phe Ile Arg Trp Met Gly Ser Cys Gln Ala Ala Val Ser Ser Met
 65 70 75 80
 Val Ser Val Ala Met Leu Thr Val Val Met Gly Leu Ile Arg Gln Val
 85 90 95
 Lys Ser Asp Val Pro Leu Leu Gly Ala Glu Ser Trp Leu Gly Phe Ser
 100 105 110
 Gln Met Leu Ser Ala Cys Ser Phe Val Leu Leu Phe Leu Trp Met Ile
 115 120 125
 Thr Met Leu Arg Leu Thr Thr Ile Arg Arg Ile His His Leu Arg Leu
 130 135 140
 Cys Asp Ile Pro Phe Val Leu Asn His Leu Gly Thr Val Pro Cys Thr
 145 150 155 160
 Asp Pro Cys Tyr Leu Trp Val Met Pro Lys Trp Asn Val Cys Gly
 165 170 175

<210> 8847
 <211> 893
 <212> PRT
 <213> B.fragilis

<400> 8847
 Phe Val Val Lys Thr Arg Gly Lys Phe Asp Phe Met Ser Glu Glu Asn
 1 5 10 15
 Asn Glu Ile Thr Glu Gly His Ser Asp Tyr Lys Pro Ala Asp Ser His
 20 25 30
 Asn Glu Ser Ile Lys His Gln Leu Thr Gly Met Tyr Gln Asn Trp Phe
 35 40 45
 Leu Asp Tyr Ala Ser Tyr Val Ile Leu Glu Arg Ala Val Pro His Ile
 50 55 60
 Asn Asp Gly Leu Lys Pro Val Gln Arg Arg Ile Leu His Ser Met Lys
 65 70 75 80

Arg	Met	Asp	Asp	Gly	Arg	Tyr	Asn	Lys	Val	Ala	Asn	Ile	Val	Gly	His
				85					90					95	
Thr	Met	Gln	Phe	His	Pro	His	Gly	Asp	Ala	Ser	Ile	Gly	Asp	Ala	Leu
			100					105					110		
Val	Gln	Leu	Gly	Gln	Lys	Asp	Leu	Leu	Val	Asp	Cys	Gln	Gly	Asn	Trp
			115					120					125		
Gly	Asn	Ile	Leu	Thr	Gly	Asp	Gly	Ala	Ala	Ala	Pro	Arg	Tyr	Ile	Glu
			130					135				140			
Ala	Arg	Leu	Ser	Lys	Phe	Ala	Leu	Asp	Val	Val	Phe	Asn	Pro	Lys	Thr
145					150					155					160
Thr	Glu	Trp	Lys	Leu	Ser	Tyr	Asp	Gly	Arg	Asn	Lys	Glu	Pro	Ile	Thr
				165					170					175	
Leu	Pro	Val	Lys	Phe	Pro	Leu	Leu	Leu	Ala	Gln	Gly	Val	Glu	Gly	Ile
			180						185					190	
Ala	Val	Gly	Leu	Ser	Ser	Lys	Ile	Leu	Pro	His	Asn	Phe	Asn	Glu	Leu
			195					200					205		
Cys	Asp	Ala	Ser	Ile	Ser	Tyr	Leu	Arg	Asn	Glu	Glu	Phe	Lys	Leu	Tyr
						215						220			
Pro	Asp	Phe	Gln	Thr	Gly	Gly	Ser	Ile	Asp	Val	Ser	Lys	Tyr	Asn	Asp
225					230					235					240
Gly	Glu	Arg	Gly	Gly	Ala	Val	Lys	Ile	Arg	Ser	Lys	Ile	Asn	Lys	Val
				245						250				255	
Asp	Asn	Lys	Thr	Leu	Ala	Ile	Thr	Glu	Ile	Pro	Tyr	Gly	Arg	Thr	Thr
				260					265					270	
Thr	Ser	Val	Ile	Asp	Ser	Ile	Leu	Lys	Ala	Val	Asp	Lys	Gly	Lys	Ile
				275				280					285		
Lys	Ile	Arg	Lys	Val	Asp	Asp	Asn	Thr	Ala	Ala	Asn	Val	Glu	Ile	Leu
					295						300				
Val	His	Leu	Ala	Pro	Gly	Thr	Ser	Ser	Asp	Lys	Thr	Ile	Asp	Ala	Leu
305					310					315					320
Tyr	Ala	Phe	Thr	Asp	Cys	Glu	Val	Ser	Ile	Ser	Pro	Asn	Cys	Cys	Val
				325						330				335	
Ile	Asp	Asp	Gln	Lys	Pro	His	Phe	Leu	Thr	Ile	Ser	His	Val	Leu	Arg
			340						345					350	
Lys	Ser	Ala	Asp	Asn	Thr	Leu	Ser	Leu	Leu	Arg	Gln	Glu	Leu	Glu	Ile
				355				360					365		
Lys	Lys	Asp	Glu	Leu	Gln	Glu	Asn	Leu	His	Phe	Ala	Ser	Leu	Glu	Lys
					375						380				
Ile	Phe	Ile	Glu	Glu	Arg	Ile	Tyr	Lys	Asp	Lys	Glu	Phe	Glu	Gln	Ser
385					390					395					400
Lys	Asp	Met	Asp	Ala	Ala	Cys	Glu	His	Ile	Asp	Arg	Arg	Leu	Thr	Pro
				405						410				415	
Phe	Tyr	Ser	Gln	Phe	Ile	Arg	Glu	Val	Thr	Lys	Asp	Asp	Ile	Leu	Arg
			420					425						430	
Leu	Met	Glu	Ile												

[illegible]

<400> 8848

Pro	Phe	Gly	Lys	His	Thr	Leu	Tyr	Glu	Met	Ile	Val	Phe	Asn	Gln	Cys
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Pro	Phe	Arg	Ser	Cys	Arg	Thr	Thr	Phe	Arg	Asn	Lys	Phe	His	Phe	Ala
			20					25					30		
Ala	Phe	Leu	Ile	Trp	Ile	Gln	Ile	Tyr	Asn	Ile	Phe	Cys	Asn	Leu	Ile
		35				40						45			
Cys	Phe	Asp	Arg	Lys	Val	Phe	Ser	Tyr	Gln	Ile	Asn	Ala	Phe	Gly	Asn
	50					55					60				
Val	Val	Pro	Ser	Leu	Asn	Ala	Cys	Ala	Glu	Gln	Ser	Phe	Val	Phe	Ile

65				70					75				80
Leu	Val	Ser	Asp	Leu	Ile	Lys	Ser	Phe	Leu	Phe	Asn	Arg	Leu
				85					90				95
Val	Tyr	Lys	Lys	Lys	Ile	Ser	Ala	Gly	Leu	Thr	Thr	Trp	Leu
			100					105					110

<210> 8849

<211> 839

<212> PRT

<213> B.fragilis

<400> 8849

Gly	Arg	Pro	Lys	Lys	Tyr	Glu	Ile	Ala	Asp	Ile	Lys	Val	Glu	Gly	Val
1			5					10					15		
Lys	Asn	Tyr	Glu	Asp	Tyr	Val	Leu	Ile	Gly	Leu	Ser	Gly	Leu	Ser	Val
			20				25					30			
Gly	Gln	Thr	Ile	Thr	Val	Pro	Gly	Asp	Glu	Ile	Thr	Gly	Ala	Ile	Lys
		35				40					45				
Arg	Tyr	Trp	Arg	His	Gly	Leu	Phe	Ser	Asn	Val	Ser	Ile	Thr	Ala	Glu
	50				55				60						
Lys	Ile	Glu	Gly	Asn	Lys	Ile	Trp	Leu	Lys	Ile	Thr	Leu	Ala	Gln	Arg
65				70					75					80	
Pro	Arg	Ile	Ser	Asp	Ile	Arg	Tyr	His	Gly	Val	Lys	Lys	Ser	Glu	Arg
			85					90					95		
Glu	Asp	Leu	Gln	Thr	Lys	Leu	Gly	Met	Ile	Lys	Gly	Ser	Gln	Ile	Thr
			100				105						110		
Pro	Asn	Leu	Val	Asp	Arg	Ala	Lys	Val	Leu	Ser	Lys	Arg	Tyr	Phe	Asp
		115				120						125			
Asp	Lys	Gly	Phe	Lys	Asn	Ala	Glu	Ile	Thr	Ile	Thr	Gln	Arg	Asp	Asp
	130				135						140				
Pro	Ala	Asn	Glu	Asn	Gln	Val	Leu	Val	Asp	Ile	Asp	Ile	Asp	Lys	Lys
145				150					155					160	
Glu	Lys	Val	Lys	Val	His	Ala	Ile	Thr	Phe	Ala	Gly	Asn	His	Ala	Ile
			165					170					175		
Lys	Thr	Ser	Lys	Leu	Lys	Arg	Val	Met	Lys	Lys	Thr	Asn	Glu	Lys	Gly
		180					185					190			
Lys	Leu	Leu	Asn	Leu	Phe	Arg	Thr	Lys	Lys	Phe	Val	Asn	Glu	Lys	Tyr
	195					200					205				
Glu	Glu	Asp	Lys	Gln	Leu	Ile	Asp	Lys	Tyr	Asn	Glu	Leu	Gly	Tyr	
	210			215						220					
Arg	Asp	Ala	Arg	Ile	Val	Lys	Asp	Ser	Val	Ser	Lys	Phe	Asp	Asp	Lys
225				230					235					240	
Thr	Val	Asp	Val	Phe	Ile	Glu	Leu	Glu	Glu	Gly	Asp	Lys	Tyr	Tyr	Leu
			245					250						255	
Arg	Asn	Val	Thr	Trp	Val	Gly	Asn	Thr	Leu	Tyr	Pro	Ser	Glu	Gln	Leu
		260				265						270			
Asn	Tyr	Met	Leu	Arg	Met	Lys	Lys	Gly	Asp	Val	Tyr	Asn	Gln	Lys	Leu
	275					280						285			
Leu	Asn	Glu	Arg	Leu	Ser	Thr	Asp	Glu	Asp	Ala	Ile	Gly	Asn	Leu	Tyr
	290				295					300					
Tyr	Asn	Asn	Gly	Tyr	Leu	Phe	Tyr	Thr	Leu	Asp	Pro	Val	Glu	Val	Asn
305				310					315					320	
Ile	Asp	Asn	Asp	Ser	Ile	Asp	Leu	Glu	Met	Arg	Ile	Phe	Glu	Gly	Arg
			325					330						335	
Gln	Ala	Ser	Ile	Asn	Lys	Ile	Lys	Ile	Asn	Gly	Asn	Asp	Arg	Leu	Tyr
		340				345						350			
Glu	Asn	Val	Val	Arg	Arg	Glu	Leu	Arg	Thr	Arg	Pro	Gly	Glu	Leu	Phe
	355					360					365				
Ser	Arg	Glu	Asp	Leu	Met	Arg	Ser	Met	Arg	Glu	Ile	Gln	Gln	Met	Gly

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400

370	375	380
His Phe Asp Pro Glu Asn Ile Lys Pro Asp Ile Gln Pro Asp Pro Val		
385	390	395
Asn Gly Thr Val Asp Ile Ala Tyr Asp Leu Val Ser Lys Ala Asn Asp		400
	405	410
Gln Val Glu Phe Ser Ala Gly Trp Gly Gln Thr Gly Val Ile Gly Lys		415
	420	425
Leu Ser Leu Lys Phe Thr Asn Phe Ser Leu Ala Asn Leu Leu His Pro		430
	435	440
Gly Glu Asn Tyr Arg Gly Ile Leu Pro Gln Gly Asp Gly Gln Thr Leu		445
	450	455
Thr Ile Ser Gly Gln Thr Asn Ala Gln Tyr Tyr Gln Gln Tyr Ser Ile		460
465	470	475
Ser Phe Phe Asp Pro Trp Phe Gly Gly Lys Arg Pro Asn Ser Phe Ser		480
	485	490
Leu Ser Ala Phe Phe Ser Val Gln Thr Asp Ile Ser Ser Arg Tyr Tyr		495
	500	505
Asn Ser Ser Tyr Tyr Asn Asn Tyr Tyr Asn Ser Tyr Tyr Ser Gly Leu		510
	515	520
Gly Gly Tyr Gly Met Tyr Asn Tyr Gly Asn Tyr Asn Asn Tyr Glu Asn		525
	530	535
Tyr Tyr Asp Pro Asp Lys Ser Ile Lys Met Trp Gly Leu Ser Ala Gly		540
545	550	555
Trp Gly Lys Arg Leu Asn Trp Pro Asp Asp Tyr Phe Gln Leu Ser Ala		560
	565	570
Glu Leu Ser Tyr Gln Arg Tyr Ile Leu Lys Asp Trp Gln Tyr Phe Pro		575
	580	585
Val Thr Asn Gly Lys Cys Asn Asp Leu Ser Ile Gly Leu Thr Leu Ala		590
	595	600
Arg Ala Ser Tyr Asp Asn Pro Ile Tyr Pro Arg Ser Gly Ser Asp Phe		605
	610	615
Ser Leu Ser Val Gln Phe Thr Pro Pro Tyr Ser Leu Phe Asp Gly Val		620
625	630	635
Asp Tyr Ser Lys Tyr Asn Glu Tyr Asn Gln Asn Asp Met Asn Lys Met		640
	645	650
His Lys Trp Val Glu Tyr His Lys Trp Lys Phe Lys Ala Lys Thr Tyr		655
	660	665
Ile Pro Leu Leu Asn Pro Thr Val Val Lys Lys Thr Pro Val Leu Met		670
	675	680
Thr Arg Val Glu Phe Gly Ile Leu Gly His Tyr Asn Lys Tyr Lys Lys		685
	690	695
Ser Pro Phe Gly Thr Phe Asp Val Gly Gly Asp Gly Met Thr Gly Tyr		700
705	710	715
Ser Ser Tyr Ala Thr Glu Ser Val Ala Leu Arg Gly Tyr Glu Asn Ser		720
	725	730
Ser Leu Thr Pro Tyr Arg Gly Gln Glu Gly Tyr Ala Tyr Thr Arg Ile		735
	740	745
Gly Phe Glu Leu Arg Tyr Pro Leu Met Leu Glu Thr Ser Thr Asn Ile		750
	755	760
Tyr Ala Leu Thr Phe Leu Glu Ala Gly Asn Ala Trp His Asp Val Lys		765
	770	775
Asn Phe Asn Pro Phe Asp Leu Lys Arg Ser Ala Gly Val Gly Val Arg		780
785	790	795
Ile Phe Leu Pro Met Ile Gly Met Met Gly Ile Asp Trp Ala Tyr Gly		800
	805	810
Phe Asp Lys Val Leu Gly Asp Lys Ser Ala Gly Gly Ser Arg Phe His		815
	820	825
Phe Val Leu Gly Gln Glu Phe		830
835		

<210> 8850
 <211> 297
 <212> PRT
 <213> B.fragilis

<400> 8850

His	Lys	Pro	Lys	Ile	Lys	Leu	Arg	Met	Lys	Val	Lys	Thr	Ser	Ile	Leu
1				5					10					15	
Leu	Leu	Leu	Met	Ile	Ala	Thr	Ala	Leu	Pro	Ser	Phe	Gly	Gly	Asn	Gly
			20					25					30		
Asn	Gly	Asn	Gly	Thr	Asp	Ser	Leu	Gln	Ala	Thr	Arg	Tyr	Val	Thr	Arg
			35				40					45			
Ala	Thr	Met	Tyr	Gly	Val	Gly	Tyr	Thr	Asn	Val	Phe	Asp	Thr	Tyr	Leu
	50					55					60				
Ser	Pro	Gln	Glu	Tyr	Lys	Gly	Ile	Glu	Phe	Arg	Ile	Ser	Arg	Glu	Thr
65					70					75				80	
Met	Arg	Met	Thr	Thr	Leu	Gly	Asp	Gly	Asn	Val	Ser	Val	Gln	Asn	Phe
				85					90					95	
Phe	Gln	Ala	Asn	Leu	Ala	Tyr	Thr	His	Asn	Arg	Val	Asp	Asn	Asn	Asn
			100					105					110		
Thr	Phe	Ala	Gly	Leu	Val	Asn	Trp	Asn	Tyr	Gly	Leu	His	Tyr	Gln	Phe
			115				120					125			
Arg	Ile	Thr	Asp	Asn	Phe	Lys	Leu	Leu	Ala	Gly	Gly	Met	Gly	Asp	Phe
	130					135					140				
Asn	Gly	Gly	Phe	Val	Tyr	Asn	Leu	Arg	Asn	Thr	Asn	Asn	Pro	Ala	Ser
145					150					155					160
Ala	Arg	Ala	Tyr	Ile	Asn	Leu	Asp	Ala	Ser	Gly	Met	Ala	Ile	Trp	His
				165					170					175	
Thr	Lys	Ile	Lys	Asn	Tyr	Pro	Leu	Ala	Leu	Arg	Tyr	Gln	Val	Asn	Leu
			180					185					190		
Pro	Val	Ile	Gly	Val	Met	Phe	Ser	Pro	His	Tyr	Gly	Gln	Ser	Tyr	Tyr
			195				200					205			
Glu	Ile	Phe	Thr	Leu	Gly	His	Ala	Ser	Gly	Val	Val	Arg	Phe	Thr	Ser
	210					215					220				
Leu	His	Asn	Gln	Pro	Ala	Leu	Arg	Gln	Met	Leu	Ser	Val	Asp	Phe	Pro
225					230					235					240
Ile	Arg	Tyr	Thr	Lys	Met	Arg	Leu	Ser	Tyr	Leu	Cys	Asp	Leu	Gln	Gln
				245					250					255	
Ser	Lys	Leu	Asn	Gly	Ile	Lys	Thr	His	Thr	Tyr	Ser	Gln	Val	Phe	Met
			260					265					270		
Val	Gly	Phe	Val	His	Asp	Leu	Phe	Arg	Ile	Arg	Asn	Lys	Asn	Gly	Thr
		275					280					285			
Pro	Leu	Pro	Pro	Ala	Val	Arg	Ala	Tyr							
	290					295									

<210> 8851
 <211> 702
 <212> PRT
 <213> B.fragilis

<400> 8851

Leu	Asp	Ala	Lys	Ile	Lys	Lys	Asn	Lys	Cys	Pro	Asn	Ala	Ile	Ser	Thr
1				5					10					15	
Leu	Lys	Ile	Lys	Leu	Ser	Leu	Gln	Leu	Ser	Arg	Leu	Leu	Lys	Asn	Met
			20					25					30		
Ser	Ser	Lys	Pro	Tyr	Arg	His	Phe	Ile	Ala	Leu	Leu	Leu	Val	Leu	Phe
		35					40					45			
Cys	Ser	Arg	Phe	Glu	Ala	Gln	Ala	Glu	Asp	Leu	Phe	Ala	Lys	Thr	Asp

50	55	60
Ser Thr Leu Gln Gln Tyr	Leu Ile Arg Cys Lys	Ala Gln Ile Lys Asp
65	70	75
Pro Asp Phe Leu Gln Thr	Asn Asp Thr Leu Thr	Arg Met Ala Gln Glu
85	90	95
Lys Asn Asp Lys Arg Met	Gln Val Ile Ala Val	Ala Leu Lys Leu Asp
100	105	110
Tyr Tyr Tyr Tyr Gln Asn	Asn Pro Asp Ser Ile	Leu Val Met Val Asp
115	120	125
Arg Val Lys Lys Ile Ser	Arg Arg Asn Asn Glu	Leu Lys Tyr Phe Tyr
130	135	140
Phe Ala Trp Gly Ser Arg	Leu Ile Ile Tyr Tyr	Ile Lys Gln His Gln
145	150	155
Thr Asn Thr Ala Ile Tyr	Glu Ala Arg Lys Met	Leu Gln Ser Ala Glu
165	170	175
Ala Asp Asn Phe Ile Pro	Gly Ile Val Gln Cys	Tyr Arg Thr Leu Gly
180	185	190
Thr Val Tyr Met Thr Gln	Ser Asn Pro Lys Leu	Ala Tyr Glu Asn Phe
195	200	205
Arg Lys Gln Ile Ala Leu	Ile Glu Glu Asn Glu	Ile Glu Asp Ile Asn
210	215	220
Leu Pro Thr Gln Tyr Ala	Ser Leu Ala Gln Cys	Ala Leu Glu Met His
225	230	235
Arg Pro Asp Glu Ala Leu	Lys Ala Leu Glu Lys	Gly Ser Lys Cys Thr
245	250	255
Arg Ser Ser Tyr Gln Ile	Phe Thr Val Gln Lys	Ala Tyr Ile Leu Tyr
260	265	270
Tyr Leu Glu Thr Lys Glu	Tyr Glu Lys Ala Arg	Lys Thr Leu Val Glu
275	280	285
Leu Glu Gln Leu Phe Glu	Lys Asp Lys Ser Leu	Thr Leu Tyr Lys Ser
290	295	300
Gly Leu Phe Tyr Ile Gln	Ile Glu Tyr Tyr Arg	Asn Thr Gly Gln Tyr
305	310	315
Arg Lys Ala Leu Asp Val	Ile Glu Glu Ile Lys	Asn Asp Ser Ser Ser
325	330	335
Ile Asn Lys Tyr Leu Asp	Tyr Thr Leu Thr Gln	Lys Gln Gly Asp Ile
340	345	350
Tyr Trp Glu Met Asn Gln	Lys Ala Arg Ala Ala	Gln Tyr Tyr Arg Asp
355	360	365
Tyr Ile Leu Ala Thr Asp	Ser Ile Arg Ser Gln	Glu Ile Gln Asn Ser
370	375	380
Thr Asn Glu Phe Tyr Thr	Ile Met Glu Val Glu	Gln Leu His Lys Glu
385	390	395
Lys Asn Glu Leu Leu Leu	His Met Gln Glu Glu	Lys Leu Gln Lys Ile
405	410	415
Asn Ile Ala Leu Val Ser	Leu Val Ile Ile Leu	Val Ala Gly Thr Met
420	425	430
Leu Leu Phe His Ile Ser	Lys Leu Asn Lys Lys	Leu Lys Arg Ser Glu
435	440	445
Ala Lys Val Ile Gln Gln	Asn Lys Glu Leu Val	Glu Asn Gly Glu Glu
450	455	460
Leu Arg Lys Ala Lys Glu	Gln Ala Glu Asn Ala	Ser Arg Met Lys Thr
465	470	475
Thr Phe Ile Gln Ser Met	Ser His Glu Ile Arg	Thr Pro Leu Asn Ser
485	490	495
Ile Val Gly Phe Ser Gln	Val Leu Ser Asn Tyr	Phe Lys Glu Glu Asp
500	505	510
Asn Asp Glu Ile Arg Glu	Phe Ala Ser Ile Ile	Glu Ile Ser Ser Ser
515	520	525

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Asn Leu Leu Arg Leu Ile Asn Asp Val Leu Asp Ile Ser Tyr Leu Asp
 530 535 540
 Gln Ser Glu Ile Leu Pro Tyr Asp Lys Pro Glu Asp Ile Asn Asn Cys
 545 550 555 560
 Cys Leu Leu Ser Ile Glu Arg Thr Arg Asn Ser Ile Lys Lys Glu Val
 565 570 575
 Ser Leu Arg Phe Glu Pro Ser Cys Gly Pro Leu Met Ile Leu Thr Asn
 580 585 590
 Pro Glu Arg Val Ala Gln Ile Leu Thr His Leu Leu His Asn Ala Ile
 595 600 605
 Lys Phe Thr Asp Lys Gly Asn Ile Thr Leu Ala Tyr Thr Ile Ser Pro
 610 615 620
 Thr Glu Lys Gln Ile Val Tyr Thr Val Thr Asp Thr Gly Lys Gly Ile
 625 630 635 640
 Pro Val Glu Gln Gln Glu Tyr Val Phe Glu Arg Phe Ala Lys Leu Asn
 645 650 655
 Asp Phe Ser Gln Gly Thr Gly Leu Gly Leu Pro Ile Cys Arg Ile Ile
 660 665 670
 Ala Glu Lys Leu Gly Gly Ser Leu Ile Ile Asp Lys Thr Tyr Thr Lys
 675 680 685
 Gly Cys Arg Phe Ile Leu Thr Leu Pro Leu Ile Lys Ala Asp
 690 695 700

<210> 8852
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 8852
 Val Ile Asn Lys Leu Arg Ile Thr Thr Gly Gly Ile Asp Gly Thr Tyr
 1 5 10 15
 Ala Asp Val Arg Thr Ile Leu Arg Glu Ala Leu Ile Gly Arg Ala Thr
 20 25 30
 Gln Ile Ala Leu Ile His Asn His Pro Ser Gly His Ala Lys Pro Ser
 35 40 45
 Gln Glu Asp Lys Arg Leu Thr Gly Ala Ile Gln Lys Ala Ser Gln Thr
 50 55 60
 Met Asn Ile Thr Leu Val Asp His Val Ile Val Cys Asp Gly Cys Phe
 65 70 75 80
 Tyr Ser Phe Ala Asp Glu Gly Leu Ile
 85

<210> 8853
 <211> 141
 <212> PRT
 <213> B.fragilis

<400> 8853
 Ile Met Asn Lys Gln Lys Leu Asn Ile Lys Gln Trp Ser Lys Ala Asp
 1 5 10 15
 Arg Pro Arg Glu Lys Met Met Ala Lys Gly Ser Glu Ala Leu Ser Asp
 20 25 30
 Ala Glu Leu Leu Gly Ile Leu Ile Gly Ser Gly Asn Thr Glu Glu Ser
 35 40 45
 Ala Val Glu Leu Met Arg Arg Ile Leu Ala Thr Cys Asp Asn Asn Leu
 50 55 60
 Asn Glu Leu Gly Lys Trp Glu Val Arg Asn Phe Ser Ser Phe Lys Gly
 65 70 75 80
 Met Gly Pro Ala Lys Ser Leu Thr Ile Met Ala Ala Leu Glu Leu Gly

				85					90					95			
Lys	Arg	Arg	Lys	Leu	Gln	Glu	Ser	Lys	Glu	Arg	Glu	Gln	Ile	Arg	Cys		
			100					105					110				
Ser	Glu	Asp	Ile	Tyr	Lys	Leu	Phe	His	Pro	Leu	Met	Cys	Asp	Leu	Pro		
		115					120					125					
Gln	Glu	Glu	Phe	Trp	Ile	Leu	Leu	Leu	Asn	Gln	Ala	Cys					
	130					135					140						

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 <212> PRT
 <213> B.fragilis

<400> 8854

Arg	Met	Asn	Lys	Lys	Ile	Tyr	Leu	Leu	Pro	Leu	Leu	Leu	Leu	Ala	Leu		
1				5					10					15			
Ile	Phe	Val	Ser	Cys	Glu	Glu	Thr	Lys	Glu	Ala	Thr	Lys	Phe	Asp	Asn		
			20					25					30				
Trp	Arg	Ala	Arg	Asn	Glu	Gly	Tyr	Ile	Asp	Ser	Leu	Lys	Thr	Val	Phe		
		35					40					45					
Asp	Glu	Lys	Thr	Asp	Pro	Glu	Leu	Lys	Ala	Phe	Glu	Pro	Glu	Ile	Asn		
	50					55					60						
Pro	Lys	Leu	Arg	Ile	Tyr	Tyr	Lys	Lys	Lys	Ile	Ser	Asn	Asp	Thr	Gly		
65					70					75					80		
Ala	Ile	Pro	Leu	Tyr	Thr	Asp	Ser	Val	Asn	Val	Phe	Tyr	Arg	Gly	Ser		
				85					90					95			
Phe	Ile	Phe	Gly	Glu	Thr	Phe	Asp	Gln	Asn	Phe	Thr	Gly	Ala	Asp	Pro		
			100					105					110				
Gly	Pro	Phe	Asp	Ser	Pro	Thr	Lys	Phe	Val	Ile	Gln	Thr	Phe	Ile	Thr		
		115					120					125					
Val	Gly	Gly	Val	Ser	Gly	Trp	Ala	Glu	Ile	Leu	Gln	Arg	Met	Arg	Val		
	130					135					140						
Gly	Glu	Arg	Trp	Leu	Val	Tyr	Ile	Pro	Trp	Glu	Leu	Ala	Tyr	Gly	Ala		
145					150					155					160		
Ser	Gly	Thr	Asp	Asp	Ile	Pro	Gly	Tyr	Ser	Thr	Leu	Ile	Phe	Asp	Met		
			165						170					175			
Gln	Leu	Glu	Glu	Ile	Leu	Asp	Glu										
			180														

<210> 8855
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 <212> PRT
 <213> B.fragilis

<400> 8855

Ile	Lys	Asn	Lys	Asn	Met	Asn	Ser	Asn	Ile	Glu	Lys	Ser	Asp	Lys	Pro		
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Ser	Phe	Ile	Lys	Ile	Ser	Glu	Gln	Pro	Ser	Leu	Tyr	Asp	Asp	Leu	Glu		
			20					25					30				
Lys	Lys	Ser	Ile	Arg	Glu	Ile	Leu	Glu	Asp	Ile	Asn	Lys	Glu	Asp	Gln		
		35					40					45					
Lys	Val	Ala	Ile	Ala	Val	Gln	Lys	Ala	Ile	Pro	Gln	Ile	Glu	Lys	Leu		
	50					55					60						
Val	Thr	Gln	Ile	Val	Pro	Arg	Met	Lys	Gln	Gly	Gly	Arg	Ile	Phe	Tyr		
65					70					75					80		
Met	Gly	Ala	Gly	Thr	Ser	Gly	Arg	Leu	Gly	Val	Leu	Asp	Ala	Ser	Glu		
				85					90					95			
Ile	Pro	Pro	Thr	Phe	Gly	Met	Pro	Pro	Thr	Leu	Ile	Ile	Gly	Leu	Ile		
			100					105					110				

Ala Gly Gly Asp Thr Ala Leu Arg Asn Pro Val Glu Asn Ala Glu Asp
 115 120 125
 Asn Thr Ile Arg Gly Trp Glu Glu Leu Thr Glu His Asn Ile Asn Asp
 130 135 140
 Lys Asp Thr Val Ile Gly Ile Ala Ala Ser Gly Thr Thr Pro Tyr Val
 145 150 155 160
 Ile Gly Ala Met His Ala Ala Arg Glu His Gly Ile Leu Thr Gly Cys
 165 170 175
 Ile Thr Ser Asn Pro Asn Ser Pro Met Ala Ala Glu Ala Asp Ile Pro
 180 185 190
 Ile Glu Met Ile Val Gly Pro Glu Tyr Val Thr Gly Ser Ser Arg Met
 195 200 205
 Lys Ser Gly Thr Gly Gln Lys Met Ile Leu Asn Met Ile Thr Thr Ser
 210 215 220
 Val Met Ile Gln Leu Gly Arg Val Lys Gly Asn Lys Met Val Asn Met
 225 230 235 240
 Gln Leu Ser Asn Arg Lys Leu Val Asp Arg Gly Thr Arg Met Ile Ile
 245 250 255
 Glu Glu Leu Gly Leu Glu Tyr Asn Lys Ala Lys Ala Leu Leu Leu Met
 260 265 270
 His Gly Ser Val Lys Lys Ala Ile Asp Ala Tyr Lys Ala Gly
 275 280 285

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<211> 265

<212> PRT

<213> B.fragilis

<400> 8856

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 Ala Ala Ser Ala Leu Tyr Ala Gln Lys Pro Val Lys Val Lys Gly Val
 20 25 30
 Gln Gly Arg Trp Gln Val Ser Asp Asp Ile Thr Leu Lys Gln Ala Glu
 35 40 45
 Glu Arg Ala Phe Met Glu Ala Lys Lys Ala Ala Leu Gln Lys Ala Gly
 50 55 60
 Val Met Glu Asn Val Trp Ser Val Phe Gly Gln Ile Thr Gln Glu Asp
 65 70 75 80
 Gly Gln Glu Leu His Glu Ala Tyr Ser Gln Met Asn Val Leu Ala Ile
 85 90 95
 Gly Gly Met Val Asn Val Thr Asn Lys Lys Val Glu Glu Val Trp Asp
 100 105 110
 Thr Asp Thr Arg Ser Leu Tyr Lys Val Val Thr Ile Asp Ala Glu Val
 115 120 125
 Arg Lys Glu Asp Lys Ser Asp Ser Ser Tyr Ala Leu Glu Val Lys Gly
 130 135 140
 Val Glu Thr Leu Tyr Arg Glu Gly Asp Val Phe His Cys Lys Leu Thr
 145 150 155 160
 Ile His Gly Thr Asp Ser Tyr Leu Lys Phe Phe Trp Phe Asp Ser Asn
 165 170 175
 Gly Gly Ala Leu Leu Tyr Pro Asn Ser Tyr Glu Pro Asn Thr Leu Leu
 180 185 190
 Lys Ala Gly Lys Glu Tyr Ala Ile Pro Phe Ser Asn Ala Val Asp Tyr
 195 200 205
 Arg Met Glu Lys Gln His Gly Lys Glu Ser Glu Lys Ile Asn Met Met
 210 215 220
 Met Val Ala Thr Lys Glu Asp Ile Pro Phe Thr Lys Glu Val Thr Tyr
 225 230 235 240

Gln Asn Val Leu Glu Trp Val Tyr Ser Ile Pro Ala Val Gln Arg Cys
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 Ala Phe Tyr Asp Met Val Leu Ile Lys
 260 265

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 Leu Leu Leu Gln Asn Val Glu Ala Leu Ala Thr Gly Glu Ser Phe Pro
 35 40 45
 Asp Gly Asp Ile Ala Cys Ile Gly Asp Gly Ser Val Asp Cys Pro Phe
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 Thr Tyr Leu Lys Val Glu Val Val Tyr Arg Glu Glu
 65 70 75

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 20 25 30
 Ala Gln Gly Gly Ile Glu Lys Ile Gly Leu Lys Asp Ser Phe Leu Lys
 35 40 45
 Leu Thr Leu Pro Asn Gly Glu Lys Lys Ile Leu Glu Lys Asp Ile Pro
 50 55 60
 Glu His Thr Val Gly Val Glu Phe Ile Leu Asn Thr Leu Val Ser Pro
 65 70 75 80
 Glu Tyr Gly Ala Ile Gln Ser Leu Glu Glu Ile Asn Ala Val Gly His
 85 90 95
 Arg Met Val His Gly Gly Glu Arg Phe Ser Lys Ser Val Leu Leu Thr
 100 105 110
 Lys Glu Val Leu Glu Ala Phe Ala Ala Cys Asn Asp Leu Ala Pro Leu
 115 120 125
 His Asn Pro Ala Asn Leu Lys Gly Val Asp Ala Ile Thr Ala Ile Leu
 130 135 140
 Pro Asn Val Pro Gln Ile Gly Val Phe Asp Thr Ala Phe His Gln Thr
 145 150 155 160
 Met Pro Glu His Ala Tyr Leu Tyr Ala Ile Pro Tyr Glu Leu Tyr Lys
 165 170 175
 Lys Tyr Gly Val Arg Arg Tyr Gly Phe His Gly Thr Ser His Arg Tyr
 180 185 190
 Val Ser Gln Arg Val Cys Glu Tyr Leu Gly Ile Lys Pro Glu Gly Leu
 195 200 205
 Lys Leu Ile Thr Cys His Ile Gly Asn Gly Gly Ser Ile Ala Ala Ile
 210 215 220
 Lys Asp Gly Lys Cys Ile Asp Thr Ser Met Gly Leu Thr Pro Leu Glu
 225 230 235 240
 Gly Leu Met Met Gly Thr Arg Ser Gly Asp Ile Asp Ala Gly Ala Val

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<212> PRT
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Lys	Lys	Ile 35	Tyr	Leu	Leu	Val	Thr 40	Ser	Pro	Ser	Phe	Asp 45	Pro	Leu	Pro
Gly	Cys 50	Glu	Leu	Leu	Tyr	Val 55	Asp	Lys	Leu	Thr	Asn 60	Ser	Ala	Ser	Met
Tyr 65	Ala	Ile	Ala	Thr 70	Tyr	Ser	Asp	Ala	Ser	Tyr 75	Thr	Leu	Leu	Tyr 80	Thr
Lys	Tyr	Thr	Ser 85	Leu	Glu	Leu	Gly	Leu	Phe 90	Ala	Leu	Glu	Arg 95	Met	Ile
His	Ile	Ala 100	Glu	Asp	Ser	Ala	Ala 105	Gly	Met	Val	Tyr	Ala 110	Asp	His	Tyr
Gln	Val	Thr 115	Glu	Gly	Lys	Gln	Ser 120	Asn	Ala	Pro	Val	Ile 125	Asp	Tyr	Gln
Phe	Gly 130	Ser	Leu	Arg	Asp	Asp 135	Phe	Asn	Phe	Gly	Ser 140	Val	Leu	Leu	Phe
Lys 145	Ala	Ser	Ala	Leu	Lys 150	Glu	Ala	Ala	Lys	Arg 155	Met	Lys	Ser	Asp 160	Tyr
Asp	Phe	Ala	Gly 165	Phe	Tyr	Asp	Leu	Arg 170	Leu	Lys	Leu	Ser	Gln 175	Lys	Tyr
Pro	Leu	Val 180	His	Ile	Asn	Glu	Tyr 185	Leu	Tyr	Ser	Glu	Val 190	Glu	Asn	Asp
Thr	Arg 195	Lys	Ser	Gly	Glu	Lys 200	Ile	Phe	Asp	Tyr	Val 205	Asp	Pro	Lys	Asn
Arg	Asp 210	Arg	Gln	Ile	Glu	Met 215	Glu	Glu	Ala	Cys 220	Thr	Glu	His	Leu	Gln
Glu 225	Ile	Gly	Gly	Tyr 230	Leu	Lys	Pro	Glu	Phe 235	Gln	Lys	Ile	Glu	Phe 240	Asn
Thr	Gly	Asn	Phe	Pro	Tyr	Glu	Ala	Ser	Val	Ile	Ile	Pro	Val	Arg	Asn

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

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Phe	Gly	Ile	Tyr	Phe	Phe	Ala	Lys	Leu	Leu	Gln	Lys	Lys	Thr	Gly	Ile
			20					25					30		
Leu	Leu	Leu	Asn	Pro	Ile	Leu	Leu	Thr	Ile	Ala	Val	Ile	Ile	Ile	Phe
		35					40					45			
Leu	Lys	Leu	Thr	Asn	Ile	Ser	Phe	Glu	Thr	Tyr	Asn	His	Gly	Gly	His
	50					55					60				
Leu	Ile	Glu	Phe	Trp	Leu	Lys	Pro	Ala	Val	Val	Ala	Leu	Gly	Val	Pro
65					70					75					80
Leu	Tyr	Leu	Gln	Leu	Glu	Thr	Ile	Lys	Lys	Gln	Leu	Leu	Pro	Ile	Ile
				85					90					95	
Leu	Ser	Gln	Leu	Ala	Gly	Cys	Ile	Val	Gly	Val	Ile	Ser	Val	Val	Leu
			100					105					110		
Ile	Ala	Lys	Leu	Met	Gly	Ala	Ser	Gln	Glu	Val	Ile	Leu	Ser	Leu	Ala
		115					120					125			
Pro	Lys	Ser	Val	Thr	Thr	Pro	Ile	Ala	Met	Glu	Val	Thr	Lys	Thr	Leu
	130					135					140				
Gly	Gly	Ile	Pro	Ser	Leu	Thr	Ala	Ala	Val	Val	Val	Cys	Val	Gly	Leu
145					150					155					160
Leu	Gly	Ala	Val	Leu	Gly	Phe	Lys	Thr	Met	Lys	Ile	Met	His	Val	Gly

				165				170					175				
Ser	Pro	Ile	Ala	Gln	Gly	Leu	Ser	Met	Gly	Thr	Ala	Ala	His	Ala	Val		
			180					185					190				
Gly	Thr	Ser	Thr	Ala	Met	Asp	Ile	Ser	Ser	Lys	Tyr	Gly	Ala	Tyr	Ala		
		195					200					205					
Ser	Leu	Gly	Leu	Thr	Leu	Asn	Gly	Ile	Phe	Thr	Ala	Leu	Leu	Thr	Pro		
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Thr	Ile	Leu	Arg	Leu	Leu	Gly	Ile	Leu									
225					230												

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<211> 341

<212> PRT

<213> B.fragilis

<400> 8861

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Val	Gly	Gln	Glu	Phe	Leu	Arg	Val	Leu	Asp	Glu	Arg	Asn	Phe	Pro	Leu		
		20					25						30				
Asp	Glu	Leu	Val	Leu	Phe	Gly	Ser	Lys	Arg	Ser	Ala	Gly	Thr	Lys	Tyr		
	35					40						45					
Thr	Phe	Arg	Gly	Lys	Gln	Ile	Glu	Val	Lys	Leu	Leu	Gln	His	Asn	Asp		
	50				55						60						
Asp	Phe	Lys	Gly	Val	Asp	Ile	Ala	Phe	Thr	Ser	Ala	Gly	Ala	Gly	Thr		
65					70				75						80		
Ser	Lys	Glu	Phe	Glu	Lys	Thr	Ile	Thr	Gln	Tyr	Gly	Ala	Val	Met	Ile		
				85				90						95			
Asp	Asn	Ser	Ser	Ala	Phe	Arg	Met	Asp	Ala	Asp	Val	Pro	Leu	Val	Val		
		100					105						110				
Pro	Glu	Val	Asn	Ala	Ala	Asp	Ala	Lys	Asp	Arg	Pro	Arg	Gly	Val	Ile		
		115					120					125					
Ala	Asn	Pro	Asn	Cys	Thr	Thr	Ile	Gln	Met	Val	Val	Ala	Leu	Lys	Ala		
	130					135					140						
Ile	Glu	Glu	Leu	Ser	His	Ile	Lys	Thr	Val	His	Val	Ser	Thr	Tyr	Gln		
145					150					155					160		
Ala	Ala	Ser	Gly	Ala	Gly	Ala	Ala	Ala	Met	Asp	Glu	Leu	Tyr	Glu	Gln		
			165						170					175			
Tyr	Arg	Gln	Val	Leu	Ala	Asn	Glu	Pro	Val	Thr	Val	Glu	Lys	Phe	Ala		
		180						185					190				
Tyr	Gln	Leu	Ala	Phe	Asn	Leu	Ile	Pro	Gln	Ile	Asp	Val	Phe	Thr	Glu		
	195					200					205						
Asn	Gly	Tyr	Thr	Lys	Glu	Glu	Met	Lys	Met	Tyr	Asn	Glu	Thr	Arg	Lys		
	210					215					220						
Ile	Met	His	Ser	Asp	Val	Lys	Val	Ser	Ala	Thr	Cys	Val	Arg	Val	Pro		
225					230					235					240		
Ala	Leu	Arg	Ala	His	Ser	Glu	Ser	Ile	Trp	Val	Glu	Thr	Glu	Arg	Pro		
			245						250					255			
Ile	Ser	Ile	Glu	Glu	Ala	Arg	Glu	Ala	Phe	Ala	Lys	Gly	Glu	Gly	Leu		
		260						265					270				
Val	Leu	Gln	Asp	Asn	Pro	Ala	Glu	Lys	Glu	Tyr	Pro	Met	Pro	Leu	Phe		
	275						280					285					
Leu	Ala	Gly	Lys	Asp	Pro	Val	Tyr	Val	Gly	Arg	Ile	Arg	Lys	Asp	Leu		
	290					295					300						
Thr	Asn	Asp	Cys	Gly	Leu	Thr	Phe	Trp	Ile	Val	Gly	Asp	Gln	Ile	Lys		
305					310					315					320		
Lys	Gly	Ala	Ala	Leu	Asn	Ala	Val	Gln	Ile	Ala	Glu	Tyr	Leu	Ile	Lys		
				325					330						335		
Glu	Gly	Asn	Ile	Gly													

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<400> 8862

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Thr	Thr	Ile	Met	Lys	Glu	Pro	Lys	Val	Gln	Val	Gly	Ile	Leu	Phe	Glu
			20					25					30		
Pro	Gln	Ile	Lys	Phe	Ile	Leu	Leu	Thr	Pro	Tyr	His	Ile	Asn	Gly	Glu
			35				40					45			
Glu	Val	Ser	Gly	Lys	Gln	Val	Val	Thr	Tyr	Asp	Asn	Gly	His	Ile	Leu
			50			55					60				
Trp	Gln	Gly	His	Ser	Tyr	Asp	Glu	Leu	Leu	Phe	Glu	Pro	Leu	His	Glu
65					70					75					80
Lys	Ser	Asp	Ala	Phe	Glu	Leu	Gln	Asp	Val	Thr	Ile	Gly	Ile	Asn	Phe
				85					90					95	
His	Trp	Glu	Arg	Lys	Glu	Asn	Gln	Arg	Phe	Ile	Gly	Ala	Leu	Lys	Ile
			100					105					110		
Ile	Val	Glu	Asn	Lys	Lys	Leu	Thr	Gly	Ile	Asn	Val	Ile	His	Val	Glu
			115				120					125			
Asp	Tyr	Leu	Thr	Ser	Val	Ile	Ser	Ser	Glu	Met	Ser	Ala	Thr	Ala	Ser
						135					140				
Leu	Glu	Leu	Leu	Lys	Ala	His	Ala	Val	Ile	Ser	Arg	Ser	Trp	Leu	Leu
145					150					155					160
Ala	Gly	Leu	Ser	Leu	Pro	Tyr	Ser	Lys	Asp	Arg	Glu	Lys	Ser	Asn	Thr
				165					170					175	
Thr	Pro	Glu	Lys	Val	Pro	Tyr	Ser	Thr	Ser	Ser	Phe	Pro	Pro	Leu	Ala
			180					185					190		
Gln	Glu	Ala	Glu	Asn	Lys	Ile	Leu	Ile	Arg	Trp	Tyr	Glu	Arg	Asp	Ala
			195				200					205			
His	Thr	His	Phe	Asp	Val	Cys	Ala	Asp	Asp	His	Cys	Gln	Arg	Tyr	Gln
			210			215					220				
Gly	Ile	Thr	Arg	Ala	Ser	Thr	Asp	Met	Val	Arg	Gln	Ala	Ile	Ser	Ala
225					230					235					240
Thr	Arg	Gly	Glu	Val	Leu	Met	Ser	Glu	Gly	Thr	Ile	Cys	Asp	Ala	Arg
				245					250					255	
Phe	Ser	Lys	Cys	Cys	Gly	Gly	Ala	Phe	Glu	Glu	Phe	Gln	Tyr	Cys	Trp
			260					265					270		
Glu	Asn	Ile	Arg	His	Pro	Tyr	Leu	Ser	Lys	Gln	Arg	Asp	Ser	Lys	Lys
			275				280					285			
Ala	Thr	Asp	Leu	Pro	Asp	Leu	Cys	Lys	Glu	Ala	Glu	Ala	Glu	Arg	Trp
			290			295					300				
Ile	Arg	Thr	Ser	Pro	Glu	Ala	Phe	Cys	Asn	Thr	Lys	Asp	Lys	Lys	Val
305					310					315					320
Leu	Ser	Gln	Val	Leu	Asn	Asn	Tyr	Asp	Gln	Glu	Thr	Thr	Asp	Phe	Tyr
				325					330					335	
Arg	Trp	Lys	Val	Glu	Tyr	Glu	Gln	Glu	Glu	Leu	Ser	Lys	Leu	Ile	Leu
			340					345					350		
Lys	Arg	Ser	Gly	Ile	Asp	Tyr	Gly	Gln	Ile	Leu	Asp	Leu	Val	Pro	Val
			355				360					365			
Glu	Arg	Gly	Thr	Ser	Gly	Arg	Leu	Val	Arg	Leu	Lys	Ile	Ile	Gly	Thr
			370			375					380				
Lys	Arg	Thr	Met	Ile	Ile	Gly	Lys	Glu	Leu	Glu	Ile	Arg	Arg	Thr	Leu
385					390					395					400
Ser	Pro	Ser	His	Leu	Tyr	Ser	Ser	Ala	Phe	Ile	Ile	Asp	Lys	Val	Asn

405 410 415
 Val Thr Asn Gly Ile Pro Asp Arg Phe Ile Leu Thr Gly Ala Gly Trp
 420 425 430
 Gly His Gly Val Gly Leu Cys Gln Ile Gly Ala Ala Val Met Gly Glu
 435 440 445
 Gln Gly Tyr Thr Tyr Asp Thr Ile Leu Leu His Tyr Tyr Ile Gly Ala
 450 455 460
 Thr Ile Asp Lys Leu Tyr
 465 470

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 <212> PRT
 <213> B.fragilis

<400> 8863
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 Val Val Gly Leu Gly Gly Val Gly Ala Tyr Ala Ala Glu Met Ile Cys
 35 40 45
 Arg Ala Gly Val Gly Arg Met Thr Ile Val Asp Ala Asp Ile Val Gln
 50 55 60
 Pro Thr Asn Ile Asn Arg Gln Leu Pro Ala Thr His Ala Thr Leu Gly
 65 70 75 80
 Met Glu Lys Ala Lys Val Leu Glu Ala Arg Phe Arg Asp Ile Asn Pro
 85 90 95
 Glu Ile Glu Leu Thr Val Leu Pro Val Tyr Leu Lys Asp Asp Asn Ile
 100 105 110
 Pro Glu Leu Leu Asp Ala Ala Arg Tyr Asp Phe Ile Val Asp Ala Ile
 115 120 125
 Asp Thr Ile Ser Pro Lys Cys Tyr Leu Ile Tyr His Ala Leu Gln Arg
 130 135 140
 Arg Ile Lys Ile Ile Ser Ser Met Gly Ala Gly Ala Lys Ser Asp Ile
 145 150 155 160
 Thr Gln Val Arg Phe Ala Asp Leu Trp Asp Thr Tyr His Cys Gly Leu
 165 170 175
 Ser Lys Ala Val Arg Lys Arg Leu Gln Lys Met Gly Val Lys Arg Lys
 180 185 190
 Leu Pro Val Val Phe Ser Thr Glu Gln Ala Asp Pro Lys Ala Val Leu
 195 200 205
 Leu Thr Asp Asp Glu Arg Asn Lys Lys Ser Thr Cys Gly Thr Val Ser
 210 215 220
 Tyr Met Pro Ala Val Phe Gly Cys Tyr Leu Ala Glu Tyr Val Ile Lys
 225 230 235 240
 Arg Leu

<210> 8864
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 8864
 Arg Arg Lys Asp Thr Asp Phe Tyr Ser Lys Thr Lys Ile Ile Val Ser
 1 5 10 15
 Phe Thr Gly Ala Gln Ser Lys Ile Asn Leu Glu Cys Asp Val Ala Phe
 20 25 30

Arg Thr His Met Cys Glu Arg Gly Val Val Pro Arg Asp Gly Leu Tyr
 35 40 45
 Ser Ile Ser Ala Leu Arg Gly Ser Phe Thr Gly Thr Pro
 50 55 60

<210> 8865

<211> 495

<212> PRT

<213> B.fragilis

<400> 8865

Gln Ile Met Glu Lys Lys Leu Lys Ser Trp Gln Gly Trp Leu Leu Phe
 1 5 10 15
 Cys Gly Ala Met Ala Val Val Phe Val Leu Gly Leu Val Val Ser Ser
 20 25 30
 Leu Met Glu Arg Arg Ala Glu Thr Val Ser Val Phe Asn Asn Lys Arg
 35 40 45
 Val Glu Ile Thr Gly Ile Glu Ala Arg Asn Glu Val Phe Gly Glu Asn
 50 55 60
 Tyr Pro Arg Gln Tyr Glu Thr Trp Lys Glu Thr Ala Lys Thr Asp Phe
 65 70 75 80
 Lys Ser Glu Phe Asn Gly Asn Glu Ala Val Asp Val Leu Glu Gln Arg
 85 90 95
 Pro Glu Met Val Val Leu Trp Ala Gly Tyr Ala Phe Ser Lys Asp Tyr
 100 105 110
 Ser Thr Pro Arg Gly His Met His Ala Ile Glu Asp Ile Thr His Ser
 115 120 125
 Leu Arg Thr Gly Ala Pro Met Asp Asp Lys Ser Gly Pro Gln Pro Ser
 130 135 140
 Thr Cys Trp Thr Cys Lys Ser Pro Asp Val Pro Arg Met Met Glu Thr
 145 150 155 160
 Ile Gly Val Asp Ser Phe Tyr Asn Asn Lys Trp Gly Ala Phe Gly Ser
 165 170 175
 Glu Ile Val Asn Pro Ile Gly Cys Ala Asp Cys His Glu Pro Thr Asn
 180 185 190
 Met Lys Leu His Ile Ser Arg Pro Ala Leu Arg Glu Ala Phe Ala Arg
 195 200 205
 Gln Gly Lys Asp Ile Asp Lys Ala Thr Pro Gln Glu Met Arg Ser Leu
 210 215 220
 Val Cys Ala Gln Cys His Val Glu Tyr Tyr Phe Lys Gly Asp Gly Lys
 225 230 235 240
 Tyr Leu Thr Phe Pro Trp Asp Lys Gly Phe Ser Val Glu Asp Met Glu
 245 250 255
 Ala Tyr Tyr Asp Glu Ala Asp Phe Ala Asp Tyr Thr His Ala Leu Ser
 260 265 270
 Lys Ala Arg Ile Leu Lys Ala Gln His Pro Asp Tyr Glu Ile Ser Gln
 275 280 285
 Met Gly Ile His Ala Gln Arg Gly Val Ser Cys Ala Asp Cys His Met
 290 295 300
 Pro Tyr Lys Ser Glu Gly Gly Met Lys Phe Ser Asp His His Ile Gln
 305 310 315 320
 Ser Pro Leu Ala Met Ile Asp Arg Thr Cys Gln Val Cys His Arg Glu
 325 330 335
 Ser Glu Glu Thr Leu Arg Asn Asn Val Tyr Asp Arg Gln Arg Lys Ala
 340 345 350
 Asn Glu Ile Arg Gly Arg Leu Glu His Glu Leu Ala Lys Ala His Ile
 355 360 365
 Glu Ala Lys Phe Ala Trp Asp Lys Gly Ala Thr Asp Ala Gln Met Ala
 370 375 380

115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380

[illegible]

<400>	8866														
Ile 1	Ser	Met	Asp	Lys 5	Lys	Ile	Ser	Ile	Ser 10	Gln	Ile	Lys	Glu 15	Val	Val
Gln	Gln	Ala	Tyr 20	Glu	Gln	Val	Lys	Gly 25	Asn	Thr	Gly	Gly 30	Lys	Asn	Ala
Asp	Tyr 35	Ile	Pro	Tyr	Leu	Ala	Asn 40	Ile	Asp	Lys	Asn 45	Leu	Phe	Gly	Ile
Ser	Val 50	Cys	Leu	Leu	Asn	Gly 55	Gln	Thr	Ile	Thr	Val 60	Gly	Asp	Phe	Asp
Tyr 65	Arg	Phe	Gly	Ile 70	Glu	Ser	Val	Ser	Lys 75	Val	His	Thr	Ala	Ile	Leu 80
Ile	Leu	Arg	Gln 85	Tyr	Gly	Ala	Gln	Lys 90	Val	Leu	Glu	Met	Ile 95	Gly	Ala
Asp	Ala	Thr	Gly 100	Leu	Pro	Phe	Asn 105	Ser	Ile	Ile	Ala	Ile 110	Leu	Leu	Glu
Asn	Asp 115	His	Pro	Ser	Thr	Pro	Leu 120	Val	Asn	Ala	Gly 125	Ala	Ile	Ser	Ala
Cys	Ser 130	Met	Val	Thr	Pro	Ile 135	Gly	Asn	Ser	Asp	Lys 140	Lys	Trp	Asp	Ala
Ile 145	Val	Gln	Asn	Ile 150	Thr	Asp	Leu	Cys	Gly 155	Ser	Ala	Pro	Gln	Leu	Ile 160
Glu	Glu	Leu	Tyr 165	Lys	Ser	Glu	Thr	Ala 170	Thr	Asn	Phe	Asn 175	Asn	Arg	Ser
Ile	Ala	Trp 180	Leu	Lys	Asn	Tyr 185	Asn	Arg	Ile	Tyr	Asp 190	Asp	Pro	Asn	
Met	Ser 195	Leu	Asp	Leu	Tyr	Thr 200	Arg	Gln	Cys	Ser	Leu 205	Gly	Val	Thr	Ala
Gln	Met 210	Leu	Ser	Val	Ala	Ala 215	Gly	Thr	Val	Ala	Asn 220	Gly	Gly	Val	Asn
Pro 225	Val	Thr	Lys	Lys 230	Gln	Val	Phe	Asp	Ala 235	Glu	Leu	Thr	Pro	Lys	Ile 240
Thr	Ser	Met	Ile 245	Ala	Thr	Val	Gly	Phe 250	Tyr	Glu	His	Ser	Gly	Asp	Trp
Met	Tyr	Thr 260	Ser	Gly	Ile	Pro	Ala 265	Lys	Thr	Gly	Val	Gly 270	Gly	Gly	Val
Met	Gly 275	Val	Leu	Pro	Gly	Val	Phe 280	Gly	Val	Ser	Ala 285	Phe	Ala	Pro	Pro
Leu	Asp 290	Gly	Ser	Gly	Asn	Ser 295	Val	Lys	Ala 300	Gln	Leu	Ala	Ile	Lys	Tyr

Ile Met Asn Lys Leu Gly Leu Asn Val Phe Asn Gly Ala Arg Val Thr
 305 310 315 320
 Ile Val Asp

<210> 8867
 <211> 288
 <212> PRT
 <213> B.fragilis

<400> 8867
 Gln Lys Met Asp Ser Thr Ile Phe Lys Ser Leu Asn Val Asn Gly Arg
 1 5 10 15
 Leu Leu Asp Leu Ser Ile Pro Gln Val Met Gly Ile Leu Asn Val Thr
 20 25 30
 Pro Asp Ser Phe Tyr Ala Gly Ser Arg Ser Arg Thr Glu Ala Asp Ile
 35 40 45
 Ala Ala Arg Ala Arg Gln Ile Leu Asp Glu Gly Ala Ser Met Ile Asp
 50 55 60
 Ile Gly Ala Tyr Ser Ser Arg Ser Asn Ala Glu His Ile Ser Pro Glu
 65 70 75 80
 Glu Glu Met Arg Arg Leu Arg Thr Gly Leu Glu Ile Leu Asn Arg Asn
 85 90 95
 His Pro Gly Ala Ile Ile Ser Val Asp Thr Phe Arg Ala Gly Val Ala
 100 105 110
 Glu Glu Cys Val Lys Glu Tyr Gly Val Ala Ile Ile Asn Asp Ile Ser
 115 120 125
 Ala Gly Glu Met Asp Glu Gln Met Phe Pro Thr Val Ala Arg Leu Asn
 130 135 140
 Val Pro Tyr Ile Met Met His Met Gln Gly Thr Pro Gln Asn Met Gln
 145 150 155 160
 Lys Glu Pro His Tyr Glu Asn Leu Leu Lys Glu Val Phe Ile Tyr Phe
 165 170 175
 Ala Arg Lys Val Gln Gln Leu Arg Asp Leu Gly Val Lys Asp Ile Ile
 180 185 190
 Leu Asp Pro Gly Phe Gly Phe Gly Lys Thr Leu Glu His Asn Tyr Glu
 195 200 205
 Leu Met Ala His Leu Glu Glu Phe Gly Ile Phe Glu Leu Pro Leu Leu
 210 215 220
 Val Gly Val Ser Arg Lys Ser Met Ile Tyr Arg Leu Phe Gly Thr Thr
 225 230 235 240
 Pro Gln Glu Ala Leu Asn Gly Thr Thr Val Leu Asp Thr Val Ala Leu
 245 250 255
 Met Lys Gly Ala Asp Ile Leu Arg Val His Asp Val Arg Glu Ala Val
 260 265 270
 Glu Ser Val Arg Leu Ile Glu Lys Leu Lys Ser Val Ser Ala Cys Ser
 275 280 285

<210> 8868
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 8868
 Val Lys Thr Cys Ser Leu Asp Val Asn Asn Lys Phe Phe Lys Cys Lys
 1 5 10 15
 Arg Leu Val Ile Cys Ala Gln Glu Pro Asp Asn Leu Gln Lys Thr Leu
 20 25 30
 Thr Met Leu Ile Glu Glu Arg Cys Lys Asn Glu Asp Thr Asp Ser Asp

35 40 45
 Ser Val Asn Ser Leu Pro Glu Leu Glu Leu Ser Tyr Ser Ala Gly Ile
 50 55 60
 Cys Phe Phe Leu Leu Lys
 65 70

<210> 8869
 <211> 712
 <212> PRT
 <213> B.fragilis

<400> 8869

Tyr Met His Trp Phe Asp Leu Ser Leu Gln Leu Pro Ile Thr Asp Pro
 1 5 10 15
 Thr Trp Val Phe Phe Leu Val Leu Ile Ile Ile Leu Phe Ala Pro Met
 20 25 30
 Ile Leu Gly Arg Leu His Ile Pro His Ile Ile Gly Met Ile Leu Ala
 35 40 45
 Gly Val Val Ile Gly Glu Tyr Gly Phe Asn Val Leu Glu Arg Asp Ser
 50 55 60
 Ser Phe Glu Leu Phe Gly Lys Val Gly Leu Tyr Tyr Ile Met Phe Leu
 65 70 75 80
 Ala Gly Leu Glu Met Asp Met Glu Asp Phe Lys Lys Asn Arg Thr Lys
 85 90 95
 Gly Leu Val Phe Gly Trp Phe Thr Phe Ile Ile Pro Met Ala Leu Gly
 100 105 110
 Val Trp Ser Ser Met Glu Leu Leu Gly Tyr Gly Phe Thr Thr Ala Val
 115 120 125
 Leu Leu Ala Ser Met Tyr Ala Ser His Thr Leu Ile Ala Tyr Pro Ile
 130 135 140
 Ile Ser Arg Tyr Gly Leu Ser Arg Leu Arg Ser Val Asn Ile Thr Ile
 145 150 155 160
 Gly Gly Thr Ala Val Thr Val Thr Leu Ala Leu Ile Ile Leu Ala Val
 165 170 175
 Ile Gly Gly Met Tyr Lys Gly Thr Val Asp Gly Met Phe Trp Val Leu
 180 185 190
 Leu Val Val Lys Val Ala Phe Leu Ser Phe Leu Ile Val Phe Phe Phe
 195 200 205
 Pro Arg Ile Gly Arg Trp Phe Arg Lys Tyr Asp Asp Ser Val Met
 210 215 220
 Gln Phe Val Phe Val Leu Ala Met Val Phe Leu Gly Ser Gly Leu Met
 225 230 235 240
 Glu Phe Val Gly Met Glu Gly Ile Leu Gly Ala Phe Leu Ala Gly Leu
 245 250 255
 Val Leu Asn Arg Leu Ile Pro His Val Ser Pro Leu Met Asn Arg Leu
 260 265 270
 Glu Phe Val Gly Asn Ala Leu Phe Ile Pro Tyr Phe Leu Ile Gly Val
 275 280 285
 Gly Met Ile Ile Asp Val Arg Thr Leu Phe Thr Gly Gly Glu Ala Leu
 290 295 300
 Lys Val Ala Val Val Met Thr Val Phe Ala Thr Leu Ser Lys Trp Leu
 305 310 315 320
 Ala Ala Trp Ile Thr Gln Lys Ile Tyr His Met Gln Pro Asn Glu Arg
 325 330 335
 Ser Met Met Phe Gly Leu Ser Asn Ala Gln Ala Ala Ala Thr Leu Ala
 340 345 350
 Ala Val Leu Ile Gly His Glu Ile Ile Met Glu Asn Gly Glu Arg Leu
 355 360 365
 Leu Asn Asp Asp Val Leu Asn Gly Thr Val Val Met Ile Leu Phe Thr

370 375 380
 Cys Val Ile Ser Ser Leu Val Thr Glu Arg Ser Ala Arg Arg Phe Ala
 385 390 395 400
 Leu His Glu Glu Met Gln Phe Glu Asp Asn Lys Glu Lys Thr Glu Gln
 405 410 415
 Glu Gln Ile Leu Ile Pro Val Ala Asn Pro Asp Thr Ile Glu Asp Leu
 420 425 430
 Ile Asn Leu Ala Leu Val Ile Arg Asp Thr Lys Gln Lys Lys Glu Leu
 435 440 445
 Ile Ala Leu Asn Val Ile Asn Asp Asn Asn Ser Glu Asn Lys Glu
 450 455 460
 Leu Gln Gly Lys Arg Asn Leu Glu Lys Ala Ala Met Ile Ala Ala Ser
 465 470 475 480
 Ala Asp Val Ser Val Asn Met Val Ser Arg Tyr Asp Leu Asn Ile Ala
 485 490 495
 Ser Gly Ile Ile His Thr Ile Lys Glu Tyr Asp Ala Thr Asp Val Val
 500 505 510
 Ile Gly Leu His Arg Lys Ala Asn Ile Val Asp Ser Phe Phe Gly Asn
 515 520 525
 Leu Ala Glu Ser Leu Leu Lys Gly Thr His Arg Glu Val Ile Ile Ala
 530 535 540
 Lys Phe Leu Met Pro Val Asn Thr Leu Arg Arg Ile Ile Ile Ala Val
 545 550 555 560
 Pro Pro Lys Ala Glu Tyr Glu Thr Gly Phe Ser Lys Trp Val Glu His
 565 570 575
 Phe Cys Arg Met Gly Ser Leu Leu Gly Cys Arg Val His Phe Phe Ala
 580 585 590
 Asn Glu Gln Thr Leu Met Arg Leu Gln Gln Leu Val Lys Lys Lys His
 595 600 605
 Gly Ser Thr Pro Thr Glu Phe Ser Arg Leu Asp Glu Trp Asp Asp Leu
 610 615 620
 Leu Leu Leu Thr Gly Gln Val Asn Phe Asp His Leu Leu Val Val Ile
 625 630 635 640
 Ser Ala Arg Arg Gly Ser Ile Ser Tyr Asp Pro Ser Phe Glu Arg Leu
 645 650 655
 Pro Asn Gln Leu Gly Lys Tyr Phe Ser Asn Asn Ser Leu Ile Ile Leu
 660 665 670
 Tyr Pro Asp Gln Phe Gly Glu Pro Gln Glu Ile Val Ser Phe Ser Asp
 675 680 685
 Pro Arg Gly Tyr Asn Glu Ser Gln His Tyr Asp Lys Val Gly Lys Trp
 690 695 700
 Phe Tyr Lys Trp Leu Lys Lys Asn
 705 710

<210> 8870

<211> 969

<212> PRT

<213> B.fragilis

<400> 8870

Ile Lys Asn Trp Ala Glu Cys Arg Thr Asn Arg Glu Thr Met Lys Met
 1 5 10 15
 Glu Arg Asn Tyr Ser Ala Phe Leu Gln Asp Ile Gly Arg Phe Ile Pro
 20 25 30
 Arg Asp Arg Leu Phe Thr Asp Glu Leu His Arg Leu Ala Trp Gly Thr
 35 40 45
 Asp Ala Gly Phe Tyr Arg Leu Ile Pro Gln Ile Val Ile His Ser Ile
 50 55 60
 Asn Asp Asp Glu Val Ile Glu Ile Ile Tyr Leu Ala Asp Arg Tyr Asn

65		70		75		80									
Ile	Pro	Val	Thr	Phe	Arg	Ala	Ala	Gly	Thr	Ser	Leu	Ser	Gly	Gln	Ala
				85					90					95	
Ile	Ser	Asp	Ser	Val	Leu	Ile	Ile	Ala	Gly	Lys	Gly	Trp	Glu	Asn	Tyr
		100						105					110		
Glu	Leu	Ser	Pro	Asp	His	Glu	Lys	Ile	Tyr	Leu	Glu	Pro	Gly	Ile	Val
		115					120					125			
Gly	Gln	Arg	Val	Asn	Glu	Ile	Leu	Ala	Pro	Tyr	Gly	Arg	Lys	Phe	Ala
	130					135					140				
Pro	Asp	Pro	Ala	Ser	Ile	Lys	Ser	Ala	Met	Val	Gly	Gly	Ile	Val	Met
145					150					155					160
Asn	Asn	Ala	Ser	Gly	Met	Asn	Cys	Gly	Thr	His	Ala	Asn	Ser	Asp	Lys
			165						170					175	
Met	Leu	Leu	Ser	Val	His	Ile	Ile	Phe	Pro	Asp	Gly	Tyr	Tyr	Leu	Asn
		180						185					190		
Thr	Asp	Ser	Gln	Glu	Ser	Arg	Glu	Asn	Phe	Lys	Glu	Asp	Tyr	Pro	Glu
	195						200					205			
Phe	Leu	Gln	Arg	Ile	Cys	Glu	Leu	Arg	Asp	Gln	Ile	Arg	Ser	Asn	Glu
	210					215				220					
Lys	Leu	Ser	Ala	Arg	Ile	Arg	His	Lys	Tyr	Ser	Ile	Lys	Asn	Val	Thr
225					230					235					240
Gly	Leu	Asn	Ile	Leu	Pro	Phe	Leu	Val	Tyr	Asp	Asp	Pro	Phe	Asp	Ile
			245						250					255	
Ile	Ala	His	Leu	Met	Val	Gly	Ser	Glu	Gly	Thr	Leu	Ala	Phe	Leu	Ala
		260						265					270		
Gly	Val	Thr	Met	Lys	Thr	Glu	Tyr	Asp	Tyr	Pro	Tyr	Lys	Ala	Ser	Ala
		275					280					285			
Met	Leu	Tyr	Phe	Ser	Asp	Ile	Lys	Glu	Ala	Cys	Arg	Ala	Val	Val	Ala
	290					295				300					
Met	Lys	Arg	Leu	Val	Asn	Ala	Asn	Gly	Glu	Trp	Ile	Val	Lys	Gly	Ala
305					310					315					320
Glu	Leu	Leu	Asp	Trp	Lys	Ser	Leu	Ala	Ser	Val	Asn	Asp	Pro	Thr	Gly
			325						330					335	
Glu	Gly	Leu	Thr	Ala	Val	Leu	Thr	Glu	Thr	Lys	Ala	Cys	Thr	Gln	Glu
		340						345					350		
Glu	Leu	Asn	Gln	Asn	Ile	Ala	Ile	Ile	Glu	Glu	Ala	Leu	Lys	Ala	Phe
		355					360					365			
Asp	Thr	Tyr	Ile	Pro	Val	His	Phe	Thr	Asp	Gln	Pro	Glu	Glu	Tyr	Ser
	370					375				380					
Lys	Tyr	Trp	Ala	Ile	Arg	Ala	Gly	Ile	Phe	Pro	Ser	Val	Gly	Gly	Thr
385					390					395					400
Arg	Pro	Ser	Gly	Thr	Thr	Cys	Leu	Ile	Glu	Asp	Val	Ala	Phe	His	Ile
			405						410					415	
Glu	Asp	Leu	Pro	Glu	Ala	Thr	Ala	Glu	Leu	Gln	Gln	Leu	Ile	Ala	Arg
		420						425					430		
His	Gly	Tyr	Asp	Asp	Ala	Cys	Ile	Tyr	Gly	His	Ala	Leu	Glu	Gly	Asn
	435					440						445			
Tyr	His	Phe	Ile	Ile	Asn	Gln	Ser	Phe	Ser	Asn	Glu	Ala	Glu	Val	Lys
	450					455				460					
Arg	Tyr	Glu	Ala	Leu	Met	Asn	Asp	Val	Ile	Asp	Leu	Val	Val	Gly	Lys
465					470					475					480
Tyr	Asp	Gly	Ser	Leu	Lys	Ala	Glu	His	Gly	Thr	Gly	Arg	Asn	Met	Ala
			485						490					495	
Pro	Phe	Val	Glu	Tyr	Glu	Trp	Gly	Glu	Ala	Tyr	Ala	Ile	Met	Lys	
		500						505					510		
Glu	Val	Lys	Gln	Leu	Phe	Asp	Pro	Lys	Gly	Leu	Phe	Asn	Pro	Gly	Val
		515					520					525			
Ile	Phe	Asn	Asp	Asp	Pro	Gln	Cys	His	Ile	Lys	His	Phe	Lys	Pro	Leu
	530					535					540				

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Ser Pro Leu Thr Ile Gly Gln Asp Thr Gln Val Thr Arg Gln Ile Asp
 545 550 555 560
 Arg Cys Ile Glu Cys Gly Phe Cys Glu Val Asn Cys Leu Ser Cys Gly
 565 570 575
 Phe Thr Leu Ser Ser Arg Gln Arg Ile Val Ile Gln Arg Glu Ile Ser
 580 585 590
 Arg Leu Lys Lys Ser Gly Glu Asn Pro Gln Leu Leu Glu Thr Leu Ser
 595 600 605
 Glu Leu Tyr Arg Tyr Ser Gly Asn Trp Thr Cys Ala Gly Asp Gly Leu
 610 615 620
 Cys Ala Met Ser Cys Pro Met Gly Ile Asn Thr Gly Asp Leu Thr His
 625 630 635 640
 Ile Leu Arg Gln Ala Glu Phe Pro Pro Gly Ser Thr Gly Tyr Arg Ala
 645 650 655
 Gly Lys Phe Ala Ala Asn His Phe Ala Gly Ile Lys Ser Thr Leu Arg
 660 665 670
 Pro Val Leu Ser Leu Ala Asn Ala Ala His Ser Leu Leu Gly Thr Ser
 675 680 685
 Thr Met Thr Ser Ile Thr Arg Lys Met His Ser Ala Trp Gly Leu Pro
 690 695 700
 Gln Trp Thr Pro Ala Met Pro Lys Ser Tyr Lys Ile Arg Lys Ser Asp
 705 710 715 720
 Gln Thr Pro Ala Met Asn Asn Lys Val Val Tyr Phe Pro Ser Cys Ile
 725 730 735
 Asn Gln Thr Met Gly Leu Ala Lys Asp Ser Pro Val Asp Gln Pro Leu
 740 745 750
 Val Lys Gln Met Leu Ser Leu Leu Gln Lys Ala Gly Tyr Glu Val Ile
 755 760 765
 Phe Pro Pro Lys Met Glu Lys Leu Cys Cys Gly Thr Ile Trp Glu Ser
 770 775 780
 Lys Gly Met Leu Asp Ile Ala Asp Ser Lys Ser Thr Glu Leu Glu Ala
 785 790 795 800
 Ala Leu Trp Glu Ala Ser Glu Gln Gly Arg Tyr Pro Val Leu Cys Asp
 805 810 815
 Gln Ser Pro Cys Leu His Arg Met Arg Ala Thr Ile Gln Lys Ile Lys
 820 825 830
 Leu Tyr Glu Pro Ala Glu Phe Ile Tyr Thr Phe Leu Arg Asp Lys Leu
 835 840 845
 Glu Phe Thr Pro Thr Asp Arg Pro Ile Ala Ile His Ile Thr Cys Ser
 850 855 860
 Met Arg Lys Met Gly Leu Ala Asn Ile Leu Ile Ser Leu Ala Lys Leu
 865 870 875 880
 Cys Ser Thr Gln Val Phe Ile Pro Glu Glu Val Gly Cys Cys Gly Phe
 885 890 895
 Ala Gly Asp Lys Gly Phe Thr Gln Pro Glu Leu Asn Thr Tyr Ala Leu
 900 905 910
 Arg Lys Leu Arg Pro Gln Leu Thr Lys Ala Gly Ile Gly Ile Gly Tyr
 915 920 925
 Ser Asn Ser Arg Thr Cys Glu Ile Gly Leu Ala Thr Asn Thr Gly Ile
 930 935 940
 Pro Tyr Val Ser Ile Ala Tyr Leu Val Asp Gln Cys Thr Arg Pro Ile
 945 950 955 960
 Lys Gln Lys Asn Asn Leu Thr Leu Lys
 965

<210> 8871

<211> 385

<212> PRT

<213> B.fragilis

<400> 8871

Ser Lys Ile Trp Phe Pro Phe Gln Leu Leu Ile Ser Phe Phe Lys Thr
 1 5 10 15
 Ile Phe Met Lys Lys Leu Asn Gln Leu Leu Leu Gly Leu Leu Leu Val
 20 25 30
 Gly Ser Ala Ile Ala Cys His Arg Glu Thr Ser Leu Glu Glu Arg Asp
 35 40 45
 Ile Val Ile Asp Leu Ser Val Ser Asn Pro Tyr Leu Pro Met Ser Val
 50 55 60
 Leu Val Asp Thr Ile Glu Ser Val Arg Leu Gln Leu Pro Ser Pro Tyr
 65 70 75 80
 Phe Trp Gly Met Val Asp Asn Val Ile Ser Lys Asp Ser Cys Tyr Tyr
 85 90 95
 Ile Ser Asp Arg Lys Gln Glu Met Ala Phe Arg Phe Ser Lys Asn Gly
 100 105 110
 Thr Phe Leu Asn Ala Ile Gly Gln Arg Gly Glu Gly Pro Gly Glu Tyr
 115 120 125
 Arg Glu Met Asp Ser Phe Phe Val Gly Lys Asp Cys Val Tyr Val Cys
 130 135 140
 Asp Met Gly Lys Arg Thr Ile Tyr Ser Tyr Ser Phe Asp Gly Lys Phe
 145 150 155 160
 Leu His Ser Leu Ser Phe Pro Tyr Ser Leu Val Phe Asn Asp Val Val
 165 170 175
 Glu Leu Pro Asp Gly Arg Phe Leu Cys His Arg Pro Ser Gln Ser Glu
 180 185 190
 Asn Cys Lys Gly Leu Trp Ile Leu Asp Gln Lys Gly Arg Arg Val Lys
 195 200 205
 Asn Leu Leu Glu Tyr Glu Lys Gly Thr Pro Cys Lys Asn Ser Tyr Trp
 210 215 220
 Asn Thr Leu Cys Ala Gln Glu Asp Gly Thr Ile Lys Ile Tyr Asn Pro
 225 230 235 240
 Val Asp Gly Ser Tyr Tyr Gln Tyr Asp Ala Val Asn Asp Thr Val Val
 245 250 255
 Arg Thr Met Arg Gln Lys Ser Asn Leu Pro Met Leu Ala Asp Phe His
 260 265 270
 Cys Ser Asp Arg Glu Leu Tyr Glu Thr Lys Glu Glu Cys Thr Tyr Ser
 275 280 285
 Leu Phe Thr Val Asp Gly Lys Asn Leu Val Phe Ser Leu Trp Ser Phe
 290 295 300
 Asn Ser Ala Asn Lys Gly Met Trp Ser Val Tyr Phe Lys Lys Asp Gly
 305 310 315 320
 Arg Ile Glu Gln Gly Asn Leu Thr Lys Met Asp Ile Pro Gly Tyr Ser
 325 330 335
 Glu Met Gly Arg Pro Val Ser Ser Asn Ile Pro Asn Thr Phe Val Thr
 340 345 350
 Val Tyr Thr Asp Glu Phe Pro Asp Asp Ala Phe Pro Ser Ala Tyr Gln
 355 360 365
 Gln Gln Glu Ile Asn Glu Gln Thr Ala Ile Leu Ser Leu Leu Arg Leu
 370 375 380
 Lys
 385

<210> 8872

<211> 600

<212> PRT

<213> B.fragilis

<400> 8872

Leu Arg Gln Trp Asn Leu Gly Thr Ser Arg Pro Asp Val Ser Tyr Arg
 1 5 10 15
 Ile Val Arg Phe Thr Ser Tyr Phe Leu Ile Tyr His Lys Gln Leu Ile
 20 25 30
 Ala Asn Tyr Met Lys Lys Ile Lys Tyr Ile Ala Cys Leu Ser Leu
 35 40 45
 Ala Val Val Ser Gly Cys Asp Ser Ile Leu Asp Lys Gly Pro Leu Asp
 50 55 60
 Ser Phe Thr Asn Asp Asn Phe Trp Thr Gly Glu Gly Asn Ile Ser Gly
 65 70 75 80
 Tyr Ala Asn Ala Phe Tyr Glu Gln Phe Leu Gly Tyr Gly Asn Gly Asn
 85 90 95
 Gly Tyr Gly Asp Phe Tyr Phe Lys Thr Leu Ser Asp Asp Gln Ala Gly
 100 105 110
 Met Ser Phe Ala Lys Trp Thr Tyr Pro Asp Asn Ala Pro Ser Thr Ser
 115 120 125
 Ala Thr Trp Lys Asn Gly Trp Ile Glu Val Arg Arg Ala Asn Ile Met
 130 135 140
 Leu Glu Asn Val Pro Thr Val Ala Ser Leu Asp Glu Ala Thr Lys Asn
 145 150 155 160
 His Trp Leu Gly Val Ala Arg Leu Met Arg Ala Trp Gln Tyr Tyr His
 165 170 175
 Leu Val Arg Met Tyr Gly Asn Leu Pro Trp Ile Asp Lys Ala Leu Asn
 180 185 190
 Ile Asn Asp Glu Gly Glu Ile Tyr Gly Asn Arg Glu Asp Arg Asp Met
 195 200 205
 Val Met Asp Lys Val Leu Glu Asp Leu Asp Phe Ala Val Thr Asn Ile
 210 215 220
 Lys Asp Ile Ser Ser Lys Thr Thr Trp Ser Arg Ser Leu Ala Asn Ala
 225 230 235 240
 Met Lys Ala Glu Val Cys Leu Tyr Glu Gly Thr Phe Arg Lys Tyr Arg
 245 250 255
 Lys Asn Glu Asp Gly Gln Gln Ala Pro Asp Ala Thr Gly Ala Ala Arg
 260 265 270
 Tyr Leu Thr Ala Cys Lys Glu Ala Cys Leu Ala Val Met Ser Lys Gly
 275 280 285
 Tyr Lys Leu Asn Thr Ser Tyr Gln Gly Asn Tyr Asn Ser Thr Asp Leu
 290 295 300
 Ser Ser Asn Pro Glu Met Ile Leu Tyr Lys Ala Tyr Lys Glu Gly Leu
 305 310 315 320
 Leu Met His Ser Thr Ile Asp Tyr Thr Cys Ser Ser Thr Gln Ile Ser
 325 330 335
 Gly Met Ser Lys Asn Ala Phe Glu Ser Tyr Leu Phe Lys Asp Gly Lys
 340 345 350
 Pro Met Ala Leu Thr Ser Leu Asn Lys Ser Asp Glu Ala Pro Phe Gln
 355 360 365
 Tyr Gly His Leu Ser Leu Lys Ala Ile Leu Ala Val Arg Asp Lys Arg
 370 375 380
 Leu Ala Gln Thr Ile Asp Thr Val Leu Leu Tyr Asn Gly Arg Gly Phe
 385 390 395 400
 Thr Arg Phe Asn Thr Gly Met Glu Ser Thr Ser Ser Thr Gly Tyr Gly
 405 410 415
 Val Ala Lys Tyr Asp Asn Glu Ala Ile Pro Glu Gly Phe Arg Ser Gln
 420 425 430
 Ser Gly Lys Asn Tyr Thr His Ala Pro Leu Phe Trp Leu Ser Val Ile
 435 440 445
 Tyr Leu Asn Tyr Ala Glu Ala Cys Ala Glu Leu Gly Asn Ile Thr Gln
 450 455 460
 Asp Asp Leu Asp Lys Ser Ile Asn Leu Leu Lys Asp Arg Ala Gly Leu

465 470 475 480
 Pro His Leu Asn Pro Ile Val Gly Phe Ser Asp Pro Ala Asn Asn His
 485 490 495
 Gly Val Ser Asp Leu Ile Trp Glu Ile Arg Arg Glu Arg Arg Cys Glu
 500 505 510
 Leu Met Phe Asp Asn Asp Asn Arg Tyr Trp Asp Leu Ile Arg Trp His
 515 520 525
 Gln Leu Asp Lys Leu Asp Thr Lys Tyr Pro Asp Ile Ile Leu Gly
 530 535 540
 Ala Asn Val Ala Asn Asp Met Asp Gly Cys Glu Ala Asn Lys Val Gly
 545 550 555 560
 Lys Tyr Ile Asp Gly Ser Lys Asp Gly Ser Arg Ile Tyr Asp Lys Lys
 565 570 575
 His Tyr Leu Tyr Pro Ile Pro Thr Gly Gln Ile Ala Leu Asn Pro Gln
 580 585 590
 Leu Ala Pro Asn Asn Pro Gly Trp
 595 600

<210> 8873

<211> 341

<212> PRT

<213> B.fragilis

<400> 8873

Ile Ser Met Leu Asn Leu Ile Asn Ser Ile Val Ala Arg Ala Gln Ala
 1 5 10 15
 Asn Arg Gln Arg Ile Val Leu Pro Glu Gly Thr Glu Glu Arg Thr Leu
 20 25 30
 Lys Ala Ala Asn Gln Ile Leu Thr Asp Glu Val Ala Asp Leu Ile Leu
 35 40 45
 Leu Gly Asn Pro Glu Glu Ile Asn Ala Ala Ala Val Lys Trp Gly Leu
 50 55 60
 Gly Asn Ile Asn Arg Ala Thr Ile Ile Asp Pro Glu Asn His Pro Lys
 65 70 75 80
 Lys Glu Glu Tyr Ala Gln Leu Leu Cys Glu Leu Arg Lys Lys Lys Gly
 85 90 95
 Met Thr Ile Glu Glu Ala Arg Lys Leu Val Leu Asp Pro Leu Tyr Leu
 100 105 110
 Gly Cys Leu Ile Ile Lys Ser Gly Asp Ala Asp Gly Gln Leu Ala Gly
 115 120 125
 Ala Arg Asn Thr Thr Gly Asp Val Leu Arg Pro Ala Leu Gln Ile Ile
 130 135 140
 Lys Thr Ser Pro Gly Ile Thr Cys Val Ser Gly Ala Met Leu Leu Leu
 145 150 155 160
 Thr His Ala Pro Glu Cys Gly Gln Asn Gly Leu Leu Val Met Gly Asp
 165 170 175
 Val Ala Val Thr Pro Val Pro Asp Ala Ser Gln Leu Ala Gln Ile Ala
 180 185 190
 Val Cys Thr Ala Arg Thr Ala Gln Ala Val Ala Gly Ile Ala Glu Pro
 195 200 205
 Lys Val Ala Met Leu Ser Phe Ser Thr Lys Gly Ser Ala Lys His Glu
 210 215 220
 Asn Val Asp Lys Val Val Glu Ala Leu Lys Leu Ala Lys Glu Met Ala
 225 230 235 240
 Pro Asp Leu Asn Ile Asp Gly Glu Met Gln Ala Asp Ala Ala Leu Val
 245 250 255
 Pro Ser Val Gly Ala Ser Lys Ala Pro Gly Ser Pro Val Ala Gly Glu
 260 265 270
 Ala Asn Val Leu Ile Val Pro Ser Leu Glu Val Gly Asn Ile Ser Tyr

275	280	285
Lys Leu Val Gln Arg Leu Gly His Ala Asp Ala Val Gly Pro Ile Leu		
290	295	300
Gln Gly Ile Ala Arg Pro Val Asn Asp Leu Ser Arg Gly Cys Ser Ile		
305	310	315
Glu Asp Val Tyr Arg Met Ile Ala Ile Thr Ala Asn Gln Ala Ile Ala		
	325	330
Ala Lys Asn Gly Lys		335
340		

<210> 8874
 <211> 237
 <212> PRT
 <213> B.fragilis

<400> 8874
Ala Ile Cys Arg Arg Cys Leu Val Val Ile Trp Gln Ser Thr Leu Ser
1 5 10 15
Lys Asp Cys Lys Ile Met Ile His Leu Glu Gly Ile Thr Lys Ser Phe
20 25 30
Gly Ser Leu Gln Val Leu Lys Gly Ile Asp Leu Glu Ile Thr Gln Gly
35 40 45
Glu Val Val Ser Ile Val Gly Pro Ser Gly Ala Gly Lys Thr Thr Leu
50 55 60
Leu Gln Ile Met Gly Thr Leu Asp Ser Pro Asp Ala Gly Met Ile Asn
65 70 75 80
Ile Asp Gly Thr Asn Val Ser Arg Met Lys Glu Lys Glu Leu Ser Ala
85 90 95
Phe Arg Asn Lys His Ile Gly Phe Val Phe Gln Phe His Gln Leu Leu
100 105 110
Pro Glu Phe Thr Ala Leu Glu Asn Val Met Ile Pro Ala Phe Ile Ala
115 120 125
Gly Val Pro Thr Lys Glu Ala Ser Met Arg Ala Met Glu Ile Leu Asp
130 135 140
Phe Met Gly Leu Lys Glu Arg Ala Ser His Lys Pro Asn Glu Leu Ser
145 150 155 160
Gly Gly Glu Lys Gln Arg Val Ala Val Ala Arg Ala Leu Ile Asn Gln
165 170 175
Pro Ala Val Ile Leu Ala Asp Glu Pro Ser Gly Ser Leu Asp Ser His
180 185 190
Asn Lys Glu Glu Leu His Gln Leu Phe Phe Asp Leu Arg Asn Arg Phe
195 200 205
Gly Gln Thr Phe Val Ile Val Thr His Asp Glu Ala Leu Ala Lys Ile
210 215 220
Thr Asp Arg Thr Ile His Met Val Asp Gly Asn Ile Ile
225 230 235

<210> 8875
 <211> 328
 <212> PRT
 <213> B.fragilis

<400> 8875
Gln Arg Phe Arg Met Lys Arg Asn Ile Ala Ile Val Ala Gly Gly Asp
1 5 10 15
Thr Ser Glu Ile Val Val Ser Leu Arg Ser Ala Gln Gly Ile Tyr Ser
20 25 30
Phe Ile Asp Lys Glu Lys Tyr Asn Leu Tyr Ile Val Glu Met Glu Gly
35 40 45

Arg Arg Trp Glu Val Gln Leu Pro Asp Gly Ser Lys Thr Pro Val Asp
 50 55 60
 Arg Asn Asp Phe Ser Phe Met Asn Gly Ala Glu Lys Val Val Phe Asp
 65 70 75 80
 Phe Ala Tyr Ile Thr Ile His Gly Thr Pro Gly Glu Asp Gly Arg Leu
 85 90 95
 Gln Gly Tyr Phe Asp Met Met Arg Ile Pro Tyr Ser Cys Cys Gly Val
 100 105 110
 Leu Ala Ala Ala Ile Thr Tyr Asp Lys Phe Val Cys Asn Gln Tyr Leu
 115 120 125
 Lys Ala Phe Gly Val Arg Ile Ser Glu Ser Leu Leu Leu Arg Gln Gly
 130 135 140
 Gln Ala Val Ser Asp Glu Asp Val Val Glu Lys Ile Gly Leu Pro Cys
 145 150 155 160
 Phe Ile Lys Pro Asn Leu Gly Gly Ser Ser Phe Gly Val Thr Lys Val
 165 170 175
 Lys Thr Arg Glu Gln Ile Gln Pro Ala Ile Ala Lys Ala Phe Ser Glu
 180 185 190
 Ala Glu Glu Val Met Ile Glu Ala Phe Met Asp Gly Thr Glu Leu Thr
 195 200 205
 Cys Gly Cys Tyr Lys Thr Lys Glu Lys Ser Val Val Phe Pro Leu Thr
 210 215 220
 Glu Val Val Thr His Asn Glu Phe Phe Asp Tyr Asp Ala Lys Tyr Asn
 225 230 235 240
 Gly Gln Val Asp Glu Ile Thr Pro Ala Arg Ile Ser Glu Glu Leu Thr
 245 250 255
 Arg Arg Val Gln Thr Leu Thr Ser Ala Ile Tyr Asp Ile Leu Gly Cys
 260 265 270
 Ser Gly Ile Ile Arg Val Asp Tyr Ile Ile Thr Glu Gly Glu Lys Ile
 275 280 285
 Asn Leu Leu Glu Val Asn Thr Thr Pro Gly Met Thr Ala Thr Ser Phe
 290 295 300
 Ile Pro Gln Gln Val Arg Ala Ala Gly Leu Asp Ile Lys Asp Val Met
 305 310 315 320
 Thr Asp Ile Ile Glu Asn Lys Phe
 325

<210> 8876

<211> 171

<212> PRT

<213> B.fragilis

<400> 8876

Asn Phe Asp Arg Met Glu Tyr Ile Asn Asp Leu Ile Arg Arg Lys Asp
 1 5 10 15
 Arg Leu Leu Ser Glu Asp Glu Ala Met Ser Leu Leu Glu Asn Gly Glu
 20 25 30
 Tyr Gly Val Leu Ser Ile Ser Ser Thr Glu Glu Gly Val Tyr Gly Ile
 35 40 45
 Pro Ile Asn Tyr Val Trp Asp Lys Gln Gln Ser Ile Tyr Phe His Cys
 50 55 60
 Ala Pro Glu Gly His Lys Leu Cys Ile Leu Gln Asn Cys Asn Gln Ala
 65 70 75 80
 Ser Phe Cys Val Val Gly Arg Thr Arg Val Val Ser Asn Gln Phe Ser
 85 90 95
 Thr Glu Tyr Glu Ser Ile Val Ile Asn Gly Thr Met Ile Cys Gln Leu
 100 105 110
 Glu Glu Thr Glu Lys Arg Lys Ala Leu Glu Leu Leu Leu Asp Lys Tyr
 115 120 125

Ser	Pro	Glu	Asp	Lys	Lys	Val	Gly	Leu	Lys	Tyr	Ile	Glu	Lys	Ser	Phe
	130					135					140				
His	Arg	Thr	His	Val	Leu	Lys	Leu	Val	Ile	Lys	Val	Ile	Ser	Gly	Lys
145					150					155					160
Cys	Lys	Lys	Ile	Asn	Gln	Pro	Cys	Gln	Asp	Tyr					
				165					170						

<210> 8877

<211> 450

<212> PRT

<213> B.fragilis

<400> 8877

Val	Ile	Ser	Ser	Pro	Asn	Arg	Lys	Ile	Ser	Gln	His	Thr	Phe	Cys	Cys
1				5					10					15	
Leu	Cys	Ala	Glu	His	Ser	Asn	Gly	Ser	Phe	Val	Leu	His	Thr	Pro	Lys
			20					25					30		
Leu	Tyr	Asn	Thr	Tyr	Ile	Thr	Met	Arg	Ile	Gln	Thr	Gly	His	Gly	Thr
		35					40					45			
Ile	Pro	Leu	Ile	Thr	Leu	Ile	Gly	Ile	Trp	Ser	Ile	Ser	Ala	Leu	Asn
	50					55					60				
Ala	Leu	Pro	Gly	Leu	Ala	Val	Ser	Pro	Ile	Leu	Gly	Lys	Leu	Ser	Ala
65					70					75					80
Ile	Phe	Pro	His	Ser	Thr	Glu	Leu	Asp	Ile	Gln	Met	Leu	Ser	Ser	Leu
				85					90					95	
Pro	Ser	Leu	Leu	Ile	Ile	Pro	Phe	Ile	Leu	Leu	Ala	Gly	Lys	Leu	Thr
			100					105					110		
Glu	Arg	Val	Asn	Phe	Ile	Arg	Leu	Leu	Gln	Ala	Gly	Leu	Ala	Ile	Phe
		115					120					125			
Ala	Leu	Ser	Gly	Val	Leu	Tyr	Leu	Leu	Ser	Gly	Gln	Met	Trp	Gln	Leu
	130					135					140				
Ile	Ala	Val	Ser	Ala	Leu	Leu	Gly	Val	Gly	Ser	Gly	Leu	Ile	Val	Pro
145					150					155					160
Leu	Ser	Thr	Gly	Leu	Ile	Ser	Lys	Tyr	Phe	Val	Gly	Ser	Tyr	Arg	Val
				165					170					175	
Lys	Gln	Phe	Gly	Leu	Ser	Ser	Ala	Ile	Thr	Asn	Ile	Thr	Leu	Val	Val
			180					185					190		
Ala	Thr	Ala	Val	Thr	Gly	Tyr	Leu	Ala	Glu	Val	Asn	Trp	His	Leu	Pro
		195					200					205			
Phe	Val	Val	Tyr	Leu	Leu	Pro	Ile	Ile	Ser	Leu	Val	Leu	Ser	Val	Tyr
	210					215					220				
Leu	Gln	Arg	Ser	Met	Ala	Ser	Glu	Gly	Ser	Thr	Ser	Leu	Thr	Asn	Asp
225					230					235					240
Lys	Ala	Pro	Ala	Asp	Lys	Glu	Glu	Asp	Val	Asp	Thr	Gly	Asn	Ser	Lys
				245					250					255	
Tyr	Gly	Ile	His	Val	Arg	His	Leu	Ala	Gly	Ile	Met	Gly	Val	Tyr	Gly
			260					265					270		
Leu	Ala	Thr	Phe	Leu	Val	Leu	Val	Val	Ser	Phe	Asn	Leu	Pro	Phe	Leu
		275					280					285			
Met	Glu	Glu	Tyr	His	Phe	Thr	Ser	Gly	Asn	Ser	Gly	Ile	Met	Ile	Ser
	290					295					300				
Leu	Phe	Phe	Leu	Ala	Ile	Met	Thr	Pro	Gly	Phe	Phe	Leu	Asn	Arg	Ile
305					310					315					320
Val	Gly	Thr	Leu	Lys	Glu	Lys	Thr	Lys	Phe	Tyr	Ser	Phe	Leu	Ser	Ile
				325					330					335	
Gly	Ile	Gly	Leu	Ala	Leu	Ile	Trp	Ile	Ser	Pro	Lys	Glu	Trp	Val	Ile
			340				345						350		
Ala	Pro	Gly	Cys	Ile	Leu	Val	Gly	Leu	Gly	Tyr	Gly	Val	Ile	Gln	Pro
		355					360						365		

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Val Val Tyr Asn Gln Thr Thr His Thr Ala Ile Ser Arg Lys Val Thr
 370 375 380
 Leu Ala Leu Ala Phe Val Met Ala Met Asn Tyr Leu Ala Ile Leu Leu
 385 390 395 400
 Cys Pro Phe Ile Ile Asp Phe Phe Gln Ser Thr Val Phe His Ile Lys
 405 410 415
 Ser Gln Gln Phe Ala Phe Val Phe Asn Leu Cys Ile Ser Ile Val Met
 420 425 430
 Leu Val Ile Ser Tyr Thr Lys Arg Asn Ser Phe Leu Phe Asn Asp Asn
 435 440 445
 Leu Lys
 450

<210> 8878

<211> 486

<212> PRT

<213> B.fragilis

<400> 8878

Leu Lys Ile Arg Val Ile Met Glu Asp Leu Asn Phe Arg Lys Gly Asp
 1 5 10 15
 Ala Lys Thr Glu Ala Phe Gly Ser Asn Arg Met Leu Gln Pro Ser Pro
 20 25 30
 Val Glu Lys Ile Pro Asp Gly Pro Thr Thr Pro Glu Ile Ala Tyr Gln
 35 40 45
 Met Val Lys Asp Glu Thr Phe Ala Gln Thr Gln Pro Arg Leu Asn Leu
 50 55 60
 Ala Thr Phe Val Thr Thr Tyr Met Asp Asp Tyr Ala Thr Lys Leu Met
 65 70 75 80
 Asn Glu Ala Ile Asn Ile Asn Tyr Ile Asp Glu Thr Glu Tyr Pro Arg
 85 90 95
 Ile Ala Val Met Asn Gly Lys Cys Ile Asn Ile Val Ala Asn Leu Trp
 100 105 110
 Asn Ser Pro Glu Lys Asp Thr Trp Lys Thr Gly Ala Leu Ala Ile Gly
 115 120 125
 Ser Ser Glu Ala Cys Met Leu Gly Gly Val Ala Ala Trp Leu Arg Trp
 130 135 140
 Arg Lys Lys Arg Gln Ala Gln Gly Lys Pro Phe Asp Lys Pro Asn Phe
 145 150 155 160
 Val Ile Ser Thr Gly Phe Gln Val Val Trp Glu Lys Phe Ala Gln Leu
 165 170 175
 Trp Gln Ile Glu Met Arg Gln Val Pro Leu Thr Leu Asp Lys Thr Thr
 180 185 190
 Leu Asp Pro Glu Glu Ala Leu Lys Met Cys Asp Glu Asn Thr Ile Cys
 195 200 205
 Val Val Pro Ile Gln Gly Val Thr Trp Thr Gly Leu Asn Asp Asp Val
 210 215 220
 Glu Ala Leu Asp Lys Ala Leu Asp Ala Tyr Asn Ala Lys Thr Gly Tyr
 225 230 235 240
 Asp Ile Pro Ile His Val Asp Ala Ala Ser Gly Gly Phe Ile Leu Pro
 245 250 255
 Phe Leu Tyr Pro Asp Thr Lys Trp Asp Phe Arg Leu Lys Trp Val Leu
 260 265 270
 Ser Ile Ser Val Ser Gly His Lys Phe Gly Leu Val Tyr Pro Gly Leu
 275 280 285
 Gly Trp Val Val Trp Lys Gly Lys Glu Tyr Leu Pro Glu Glu Met Ala
 290 295 300
 Phe Ser Val Asn Tyr Leu Gly Ala Asn Ile Thr Gln Val Gly Leu Asn
 305 310 315 320

Phe Ser Arg Pro Ala Ala Gln Ile Leu Gly Gln Tyr Tyr Gln Phe Ile
 325 330 335
 Arg Leu Gly Phe Gln Gly Tyr Lys Glu Val Gln Tyr Asn Ser Leu Gln
 340 345 350
 Ile Ala Lys Tyr Ile His Ser Gln Ile Ala Lys Met Thr Pro Phe Val
 355 360 365
 Asn Tyr Ser Glu Asp Val Val Asn Pro Leu Phe Ile Trp Tyr Met Lys
 370 375 380
 Pro Glu Tyr Ala Lys Asn Ala Lys Trp Thr Leu Tyr Asp Leu Gln Asp
 385 390 395 400
 Lys Leu Ala Gln His Gly Trp Met Val Pro Ala Tyr Thr Leu Pro Ala
 405 410 415
 Lys Leu Gln Asp Tyr Val Val Met Arg Val Val Val Arg Gln Gly Phe
 420 425 430
 Ser Arg Asp Met Ala Asp Met Leu Leu Gly Asp Ile Lys Asn Ala Ile
 435 440 445
 Ala Glu Leu Glu Lys Leu Glu Tyr Pro Thr Ser Thr Arg Ile Ala Gln
 450 455 460
 Glu Lys Asn Leu Pro Val Glu Ala Lys Val Phe Asn His Thr Gly Lys
 465 470 475 480
 Pro Gln Ala Ala Lys Lys
 485

<210> 8879
 <211> 192
 <212> PRT
 <213> B.fragilis

<400> 8879
 Arg Ile Ser Ser Met Ile Asn Ala Gln Asp Ile Lys Asn Gly Thr Cys
 1 5 10 15
 Ile Arg Met Asp Gly Lys Leu Tyr Phe Cys Ile Glu Leu Val His Val
 20 25 30
 Lys Pro Gly Lys Gly Asn Thr Phe Met Arg Thr Lys Leu Lys Asp Val
 35 40 45
 Val Ser Gly Tyr Val Leu Glu Arg Arg Phe Asn Ile Gly Glu Lys Leu
 50 55 60
 Glu Asp Val Arg Val Glu Arg Arg Pro Tyr Gln Tyr Leu Tyr Lys Glu
 65 70 75 80
 Gly Glu Asp Tyr Ile Phe Met Asn Gln Glu Thr Phe Asp Gln His Pro
 85 90 95
 Ile Ala His Asp Leu Ile Asn Gly Val Asp Phe Leu Leu Glu Gly Ala
 100 105 110
 Val Val Glu Val Val Ser Asp Ala Ser Thr Glu Thr Val Leu Tyr Ala
 115 120 125
 Asp Met Pro Ile Lys Val Gln Met Lys Val Thr Tyr Thr Glu Pro Gly
 130 135 140
 Leu Lys Gly Asp Thr Ala Thr Asn Thr Leu Lys Pro Ala Thr Val Glu
 145 150 155 160
 Ser Gly Ala Thr Val Arg Val Pro Leu Phe Ile Ser Glu Gly Glu Thr
 165 170 175
 Ile Glu Ile Asp Thr Arg Asp Gly Ser Tyr Val Gly Arg Val Lys Ala
 180 185 190

<210> 8880
 <211> 470
 <212> PRT
 <213> B.fragilis

<400> 8880

Asn	Ser	Thr	Arg	Met	Lys	Arg	Leu	Phe	Tyr	Phe	Phe	Leu	Phe	Val	Cys
1				5					10					15	
Val	Ala	Val	Ile	Ala	Asn	Ala	Gln	Ala	Lys	Tyr	Val	Phe	Tyr	Phe	Ile
			20					25					30		
Gly	Asp	Gly	Met	Gly	Val	Asn	Gln	Val	Asn	Gly	Thr	Glu	Met	Tyr	Arg
			35				40						45		
Ala	Glu	Ile	Gln	Lys	Gly	Arg	Ile	Gly	Val	Glu	Pro	Leu	Leu	Phe	Thr
			50				55					60			
Gln	Phe	Pro	Val	Gly	Thr	Met	Ala	Thr	Thr	Phe	Ser	Ala	Thr	Asn	Ser
65						70					75				80
Val	Thr	Asp	Ser	Ser	Ala	Ala	Gly	Thr	Ala	Leu	Ser	Thr	Gly	Glu	Lys
				85					90					95	
Thr	Tyr	Asn	Gly	Ser	Ile	Gly	Met	Asp	Asp	Gln	Lys	Asn	Pro	Leu	Gln
			100					105					110		
Thr	Val	Ala	Glu	Lys	Ala	Lys	Lys	Ala	Gly	Lys	Arg	Val	Gly	Val	Thr
			115					120					125		
Thr	Ser	Val	Ser	Val	Asp	His	Ala	Thr	Pro	Ala	Ala	Phe	Tyr	Ala	His
			130				135					140			
Gln	Pro	Asp	Arg	Asn	Met	Tyr	Tyr	Glu	Ile	Ala	Thr	Asp	Leu	Pro	Lys
145					150					155					160
Ala	Gly	Phe	Asp	Phe	Tyr	Ala	Gly	Ala	Gly	Phe	Leu	Lys	Pro	Thr	Thr
				165					170					175	
Thr	Tyr	Asp	Lys	Lys	Glu	Ala	Pro	Ser	Ile	Phe	Pro	Met	Phe	Glu	Glu
			180					185					190		
Ala	Gly	Tyr	Thr	Ile	Ala	Arg	Gly	Tyr	Asn	Asp	Tyr	Lys	Ala	Lys	Ala
			195					200					205		
Ala	Ala	Ala	Gly	Lys	Met	Ile	Leu	Ile	Gln	Glu	Glu	Gly	Ala	Asp	Thr
			210				215					220			
Gly	Ser	Leu	Pro	Tyr	Ala	Ile	Asp	Ser	Lys	Glu	Gly	Asp	Leu	Thr	Leu
225					230					235					240
Ala	Gln	Ile	Thr	Glu	Ser	Ala	Ile	Asp	Phe	Leu	Thr	Lys	Gly	Lys	Asn
				245					250					255	
Lys	Gly	Phe	Phe	Leu	Met	Val	Glu	Gly	Gly	Lys	Ile	Asp	Trp	Ala	Cys
			260					265					270		
His	Gly	Asn	Asp	Ala	Ala	Thr	Val	Phe	His	Glu	Val	Ala	Asp	Met	Asp
			275					280					285		
Asn	Ala	Ile	Lys	Val	Ala	Tyr	Glu	Phe	Tyr	Lys	Lys	His	Pro	Lys	Glu
			290				295					300			
Thr	Leu	Ile	Val	Val	Thr	Ala	Asp	His	Glu	Thr	Gly	Gly	Ile	Ala	Leu
305					310					315					320
Gly	Thr	Gly	Lys	Tyr	Ala	Leu	Asn	Leu	Lys	Ala	Leu	Glu	Asn	Gln	Lys
			325						330					335	
Ala	Ser	Ala	Glu	Val	Leu	Ser	Lys	Lys	Ile	Ser	Asp	Leu	Arg	Lys	Ala
			340					345					350		
Lys	Asn	Asn	His	Val	Ala	Trp	Glu	Asp	Ile	Lys	Asn	Leu	Leu	Ser	Glu
			355					360				365			
Glu	Met	Gly	Phe	Trp	Ser	Val	Leu	Pro	Ile	Thr	Trp	Glu	Gln	Glu	Lys
			370				375					380			
Lys	Leu	Arg	Asp	Glu	Tyr	Glu	Lys	Ser	Phe	Val	Arg	Asn	Lys	Val	Glu
385					390					395					400
Phe	Ala	Glu	Ser	Met	Tyr	Ala	Lys	Thr	Glu	Pro	Met	Ala	Ala	Lys	Ala
				405					410					415	
Lys	Glu	Val	Met	Asp	Gln	Ile	Ala	Met	Val	Gly	Trp	Thr	Ser	Gly	Gly
			420					425					430		
His	Ser	Ala	Gly	Tyr	Val	Pro	Val	Phe	Ala	Ile	Gly	Ala	Gly	Ser	Asp
			435				440					445			
Leu	Phe	Ile	Gly	Lys	Met	Asp	Asn	Thr	Glu	Ile	Pro	Lys	Arg	Ile	Ala
			450				455					460			

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500

Lys Ala Gly Gly Tyr Lys
465 470

<210> 8881

<211> 376

<212> PRT

<213> B.fragilis

<400> 8881

Gln	Lys	Arg	Arg	Gln	Leu	Cys	Lys	Leu	Leu	Val	Ile	Arg	Glu	Gln	Asn
1				5					10					15	
Ala	Leu	Leu	Phe	Leu	Ile	Lys	Asn	Ile	Ile	Phe	Val	Asn	Glu	Leu	Gln
			20					25					30		
Thr	Tyr	Pro	Ile	Met	Lys	Gln	Thr	Ala	Tyr	Ile	Tyr	Leu	Leu	Thr	Leu
		35					40					45			
Ser	Cys	Leu	Leu	Cys	Ala	Cys	Asn	Arg	Glu	Asn	Arg	Thr	Asn	Leu	Pro
	50					55					60				
Gln	Pro	Gln	Val	Thr	Gly	Val	Ala	Asp	Ser	Leu	Glu	Thr	Val	Pro	Pro
65					70					75				80	
Glu	Glu	Lys	Pro	Lys	Ala	Ile	Ser	Ala	Glu	Gln	Ile	Glu	Ile	Lys	Lys
				85					90					95	
Asp	Leu	Leu	Tyr	Asp	Lys	Tyr	Thr	Leu	Glu	Asp	Thr	Tyr	Pro	Tyr	Lys
			100					105					110		
Asp	Thr	Thr	Arg	Ser	Phe	Gln	Trp	Asp	Lys	Ile	Lys	Glu	Arg	Leu	Ala
		115					120					125			
Leu	Leu	Glu	Asn	Ile	Gln	Gln	Thr	Pro	Ser	Gln	Trp	Gly	Ile	Leu	Gln
	130					135					140				
Asn	Tyr	Lys	Asn	Arg	Asn	Gly	Glu	Ala	Pro	Leu	Val	Arg	His	Tyr	Lys
145					150					155				160	
Arg	Asn	Ala	Tyr	Lys	Arg	Ile	Ala	Asp	Thr	Leu	Gly	Ile	Glu	Arg	Tyr
			165					170					175		
Gln	Ser	Val	Pro	Leu	Tyr	Leu	Leu	Thr	Asp	Thr	Leu	Val	Pro	Glu	Arg
			180					185					190		
Tyr	Gly	Glu	Asp	Gly	Ser	Leu	Val	Arg	Phe	Leu	Ala	Asp	Gly	Glu	Asn
		195					200					205			
Phe	Val	Lys	Val	Ser	Pro	Ile	Tyr	Ile	Gly	Glu	Glu	Trp	Tyr	Val	Pro
	210					215					220				
Lys	Arg	Tyr	Val	Lys	Val	Leu	Pro	Asp	Thr	Thr	His	Phe	Ile	Lys	Thr
225					230					235				240	
Ile	Met	Ile	Asp	Arg	Arg	Asp	Gln	Asn	Ile	Met	Thr	Leu	Glu	Gln	Thr
			245					250						255	
Gly	Glu	Ala	Gln	Trp	Thr	Val	Arg	Ser	Met	Asn	Pro	Ala	Thr	Thr	Gly
			260					265					270		
Arg	His	Arg	Pro	Ser	Tyr	Ala	Gln	Glu	Thr	Pro	Leu	Gly	Ile	Phe	Val
		275					280					285			
Leu	Gln	Glu	Lys	Lys	Thr	Arg	Met	Ile	Phe	Leu	Lys	Asp	Gly	Ser	Thr
	290					295					300				
Ala	Thr	Gly	Arg	Phe	Ala	Pro	Tyr	Ala	Asn	Arg	Phe	Ser	Asp	Gly	Gly
305					310					315				320	
Tyr	Ile	His	Gly	Val	Pro	Val	Asn	Glu	Pro	Arg	Lys	Ala	Leu	Ile	Glu
			325					330						335	
Tyr	Ser	Pro	Ser	Leu	Gly	Thr	Thr	Pro	Arg	Ser	His	Met	Cys	Val	Arg
		340						345					350		
Asn	Ala	Thr	Ser	His	Ser	Lys	Phe	Ile	Phe	Asp	Trp	Ala	Pro	Val	Asn
		355					360					365			
Glu	Thr	Ile	Ile	Phe	Val	Leu	Glu								
	370					375									

<210> 8882

<211> 413
 <212> PRT
 <213> B.fragilis

<400> 8882

Lys	Cys	Asn	Gly	Asn	Ser	Glu	Lys	Pro	Arg	Lys	Gly	Lys	Arg	Ile	Asn
1				5					10					15	
Ser	Pro	Arg	Ser	Pro	Leu	Cys	His	Thr	Asp	Ile	Leu	Phe	Gln	Asp	Ile
			20					25					30		
Arg	Met	Gly	Glu	Val	Thr	Tyr	Arg	Gln	Lys	Ser	Ile	Tyr	Leu	Cys	Phe
		35					40					45			
Gln	Ile	Val	Ser	Ile	Met	Lys	Lys	Glu	Phe	Thr	Arg	Ile	Ala	Ile	Lys
	50					55					60				
Val	Gly	Ser	Asn	Val	Leu	Thr	Arg	Gln	Asp	Gly	Thr	Leu	Asp	Val	Thr
65					70					75				80	
Arg	Met	Ser	Ala	Leu	Thr	Asp	Gln	Ile	Ala	Ala	Leu	His	Lys	Ala	Gly
			85						90					95	
Val	Glu	Val	Ile	Leu	Ile	Ser	Ser	Gly	Ala	Val	Ala	Ser	Gly	Arg	Ser
			100					105					110		
Glu	Ile	Arg	Thr	Leu	Arg	Lys	Leu	Asp	Ser	Val	Asp	Gln	Arg	Gln	Leu
		115					120					125			
Phe	Ser	Ala	Val	Gly	Gln	Ala	Lys	Leu	Ile	Asn	Arg	Tyr	Tyr	Glu	Leu
	130					135					140				
Phe	Arg	Asp	His	Gly	Ile	Ala	Val	Gly	Gln	Val	Leu	Thr	Thr	Lys	Glu
145					150					155					160
Asn	Phe	Gly	Thr	Arg	Arg	His	Tyr	Leu	Asn	Gln	Lys	Asn	Cys	Met	Thr
				165					170					175	
Val	Met	Leu	Glu	Asn	Gly	Val	Ile	Pro	Ile	Val	Asn	Glu	Asn	Asp	Thr
			180					185					190		
Ile	Ser	Val	Thr	Glu	Leu	Met	Phe	Thr	Asp	Asn	Asp	Glu	Leu	Ser	Gly
		195					200					205			
Leu	Ile	Ala	Ser	Met	Met	Asn	Ala	Gln	Ala	Leu	Ile	Ile	Leu	Ser	Asn
						215					220				
Ile	Asp	Gly	Ile	Tyr	Asn	Gly	Ser	Pro	Ser	Asp	Pro	Asp	Ser	Leu	Val
225					230					235					240
Ile	Arg	Glu	Ile	Gly	Gln	Gly	Lys	Asp	Leu	Ser	Asn	Tyr	Ile	Gln	Thr
				245					250					255	
Ser	Lys	Ser	Ser	Phe	Gly	Arg	Gly	Gly	Met	Leu	Thr	Lys	Thr	Asn	Ile
			260					265						270	
Ala	Arg	Lys	Val	Ala	Asp	Glu	Gly	Ile	Thr	Val	Ile	Ile	Ala	Asn	Gly
		275					280					285			
Lys	Arg	Asp	Asn	Ile	Leu	Ile	Asn	Leu	Ile	Glu	His	Pro	Glu	Glu	Thr
		290					295				300				
Val	Cys	Thr	Arg	Phe	Ile	Pro	Ala	Ser	Gln	Pro	Val	Ser	Ser	Ile	Lys
305					310					315					320
Lys	Trp	Ile	Ala	His	Ser	Glu	Gly	Phe	Ala	Lys	Gly	Glu	Ile	His	Ile
				325					330					335	
Asn	Glu	Gln	Ala	Thr	Glu	Val	Leu	Asn	Ser	Asp	Lys	Ala	Val	Ser	Ile
			340					345					350		
Leu	Pro	Val	Gly	Ile	Thr	Arg	Ile	Glu	Gly	Glu	Phe	Glu	Lys	Asp	Asp
		355					360					365			
Ile	Val	Arg	Ile	Ile	Asp	Tyr	Arg	Gly	Thr	Pro	Val	Gly	Val	Gly	Lys
	370					375					380				
Val	Asn	Cys	Asp	Ser	Met	Gln	Ala	Arg	Asp	Ser	Ile	Gly	Lys	His	Gly
385					390					395					400
Lys	Lys	Ala	Val	Val	His	Tyr	Asp	Tyr	Leu	Tyr	Ile	Glu			
				405					410						

<210> 8883

<211> 175
 <212> PRT
 <213> B.fragilis

<400> 8883

Thr	Asn	Leu	Gly	Val	Gln	Phe	Phe	Asn	Lys	Thr	Thr	Lys	Arg	Arg	Tyr
1				5					10					15	
Arg	Ala	Leu	Val	Trp	Gly	Ile	Val	Asp	Gln	Asp	Glu	Arg	Thr	Ile	Val
		20						25					30		
Gly	Ser	Ile	Ala	Arg	Asn	Pro	Lys	Asp	Arg	Met	Gln	Met	Ala	Val	Met
		35					40					45			
Ala	Asp	Pro	Thr	Gln	Gly	Lys	His	Ala	Val	Thr	His	Tyr	Arg	Val	Leu
	50					55					60				
Glu	Arg	Val	Gly	Tyr	Val	Thr	Leu	Val	Glu	Cys	Ile	Leu	Glu	Thr	Gly
65					70					75				80	
Arg	Thr	His	Gln	Ile	Arg	Val	His	Met	Lys	His	Ile	Gly	His	Val	Leu
			85						90					95	
Phe	Asn	Asp	Glu	Arg	Tyr	Gly	Gly	His	Glu	Ile	Leu	Lys	Gly	Thr	His
			100					105						110	
Phe	Ser	Lys	Tyr	Lys	Gln	Phe	Val	Asn	Asn	Cys	Phe	Asp	Thr	Cys	Pro
		115					120					125			
Arg	Gln	Ala	Leu	His	Ala	Met	Thr	Leu	Gly	Phe	Val	His	Pro	Val	Thr
	130					135					140				
Gly	Glu	Glu	Met	His	Phe	Thr	Ser	Glu	Leu	Pro	Asp	Asp	Met	Thr	Arg
145					150					155					160
Leu	Ile	Glu	Lys	Trp	Arg	Gly	Tyr	Ile	Ser	Asn	Arg	Asp	Leu	Glu	
			165						170					175	

<210> 8884
 <211> 297
 <212> PRT
 <213> B.fragilis

<400> 8884

Arg	Ile	Met	Gly	Arg	Pro	Ile	Lys	Ile	Ile	Gly	Tyr	Leu	Cys	Phe	Leu
1				5					10					15	
Met	Ala	Leu	Cys	Ser	Cys	Lys	Glu	Thr	Lys	Glu	Gln	Gln	Ile	Ser	Arg
		20						25					30		
Leu	Ile	His	Lys	Trp	Glu	Gly	Arg	Thr	Ile	Val	Tyr	Pro	Ala	Asp	Met
		35					40					45			
Thr	Phe	Ser	Val	Leu	Gly	Lys	Asp	Ser	Ala	Gly	Tyr	Ser	Phe	Pro	Gln
	50					55					60				
Asn	Glu	Tyr	Thr	Ile	Met	Thr	Tyr	Val	Asp	Ser	Val	Gly	Cys	Thr	Ser
65				70						75				80	
Cys	Lys	Leu	Gln	Leu	Pro	Thr	Trp	Lys	Tyr	Phe	Ile	Ser	Met	Val	Asp
			85						90					95	
Thr	Met	Ala	Asn	Gly	Lys	Val	Ser	Phe	Leu	Phe	Ala	Phe	His	Pro	Lys
			100					105						110	
Asn	Lys	Lys	Glu	Ile	Ser	Phe	Leu	Leu	Lys	Arg	Asp	Arg	Phe	Leu	Tyr
		115					120					125			
Pro	Val	Phe	Ile	Asp	Glu	Lys	Gly	Gly	Phe	Asp	Ala	Leu	Asn	His	Phe
	130					135					140				
Pro	Ser	Asp	Val	Asn	Phe	Gln	Thr	Phe	Leu	Leu	Asp	Ser	Gln	Asn	Lys
145					150					155					160
Val	Ile	Ala	Ile	Gly	Asn	Pro	Val	His	Asn	Lys	Lys	Val	Arg	Asp	Leu
			165						170					175	
Tyr	Leu	Gln	Ile	Ile	Thr	Gly	Arg	Gln	Thr	Gly	Val	Ala	Thr	Ser	Ser
		180						185					190		
Gln	Thr	Lys	Val	Val	Leu	Asp	Lys	Lys	Leu	Asp	Glu	Met	Gly	Asp	Phe

195	200	205
Asp Trp Lys Ile Pro Gln Thr	Ala Thr Phe Ser Leu Arg Asn Leu Gly	
210	215	220
Asp His Leu Leu Ile Ile Glu	Asp Ile Asn Ala Ser Cys Gly Cys Thr	
225	230	235
Ser Val Thr Tyr Ser Lys Glu	Pro Val Pro Ser Gly Lys Ser Ala Asp	
	245	250
Ile Gln Val Thr Tyr Arg Ala	Glu His Pro Glu His Phe Glu Lys Thr	
	260	265
Ile Thr Val Tyr Cys Asn Thr	Pro Thr Ser Pro Ile Arg Leu Lys Ile	
	275	280
Arg Gly Asn Ala Ile Asp Glu	Glu Tyr	285
290	295	

<210> 8885
 <211> 114
 <212> PRT
 <213> B.fragilis

<400> 8885
Leu Cys Leu Met Asn Phe Gln Arg Asn Thr Asp Met Thr Lys Phe Glu
1 5 10 15
Ile Glu Glu Lys Ile Val Asp Met Leu Lys Thr Val Phe Asp Pro Glu
20 25 30
Ile Pro Val Asn Val Tyr Asp Leu Gly Leu Ile Tyr Lys Ile Asp Val
35 40 45
Ser Glu Asp Gly Glu Val Ser Ile Asp Met Thr Leu Thr Ala Pro Asn
50 55 60
Cys Pro Ala Ala Asp Phe Ile Met Glu Asp Val Arg Gln Lys Val Glu
65 70 75 80
Ser Ile Asp Gly Val Asn Ser Ala Thr Ile Asn Leu Val Phe Glu Pro
85 90 95
Glu Trp Asp Lys Asp Met Met Ser Glu Glu Ala Lys Leu Glu Leu Gly
100 105 110
Phe Leu

<210> 8886
 <211> 521
 <212> PRT
 <213> B.fragilis

<400> 8886
Ser Leu Ile Met Met Lys Thr Lys His Tyr Phe Ser Phe Val Phe Ala
1 5 10 15
Ser Leu Phe Leu Ile Pro Ser Val Ile Thr Ala Gln Asp Val Asn Tyr
20 25 30
Gln Lys Glu Phe Asp Thr Phe Gln Glu Lys Gln Gln Lys Glu Tyr Lys
35 40 45
Glu Phe Lys Asn Lys Ala Asp Glu Glu Phe Ala Thr Phe Leu Lys Glu
50 55 60
Ala Trp Gln Lys Tyr Asn Ala Ser Met Gly Asp Ser Met Pro Thr Arg
65 70 75 80
Pro Glu Pro Val Lys Pro Thr Leu Phe Asp Lys Lys Lys Pro Val Pro
85 90 95
Ala Pro Val Glu Ile Lys Pro Ala Val Pro Lys Ile Pro Ile Ala Asp
100 105 110
Lys Pro Gly Val Gly Gly Lys Val Asn Val Glu Val Lys Lys Pro Glu
115 120 125

Leu Pro Ala Val Ala Asp Lys Pro Ala Pro Gly Val Tyr Val Pro Gly
 130 135 140
 Lys Pro Tyr Thr Pro Val Lys Val Asp Ile Pro Ala Pro Leu Pro Gly
 145 150 155 160
 Ser Ser Ala His Arg Asn Ala Ile Glu Phe Tyr Gly Thr Arg Phe Glu
 165 170 175
 Val Ala Thr Asp Val Ile Asp Gly Phe Glu Leu Gly Gly Thr Ser Glu
 180 185 190
 Ser Lys Val Ala Gly Ala Trp Ser Arg Leu Cys Lys Ala Asp His Glu
 195 200 205
 Gln Leu Ile Asn Asp Cys Ile Arg Leu Lys Lys Glu His Gln Met Asn
 210 215 220
 Asp Trp Ala Phe Leu Met Phe Ile Lys Gln Leu Gly Val Gln Met Cys
 225 230 235 240
 Gly Val Ala Lys Lys Asp Asp Val Ala Phe Leu Gln Met Phe Ile Leu
 245 250 255
 Asn Lys Cys Gly Tyr Lys Val Arg Leu Ser Lys Ile Asn Asp Lys Leu
 260 265 270
 Lys Leu Leu Val Ala Pro Ala Gly Thr Ile Phe Gly Ile Pro Tyr Ile
 275 280 285
 Thr Phe Lys Gly Val Lys Tyr Tyr Val Phe Glu Ala Asp Lys Gly Gly
 290 295 300
 Ser Met Ala Val Tyr Thr Tyr Ser Gln Asp Phe Ala Asn Ala Lys Asn
 305 310 315 320
 Leu Val Cys Met Asp Leu Ser Ala Val Pro Gln Phe Gly Met Gln Glu
 325 330 335
 Phe Ser Lys Thr Val Ser Pro Ser Glu Lys Ser Leu Leu Lys Val Asn
 340 345 350
 Thr Ala Val Asn Lys Asn Leu Met Asp Phe Tyr Lys Asp Tyr Pro Gln
 355 360 365
 Cys Glu Val Ala Val Tyr Tyr Lys Thr Pro Met Ser Lys Glu Leu Lys
 370 375 380
 Ser Ala Leu Tyr Pro Pro Leu Gln Ala Ala Ile Lys Gly Lys Ser Glu
 385 390 395 400
 Lys Asp Ala Ala Asn Ile Leu Ile Asp Phe Val Gln Asn Ser Phe Gln
 405 410 415
 Tyr Gln Thr Asp Gly Glu Gln Phe Gly Tyr Glu Lys Pro Phe Met
 420 425 430
 Asp Glu Asn Phe Tyr Tyr Pro Ala Cys Asp Cys Glu Asp Arg Ala Ile
 435 440 445
 Leu Phe Ser Asn Leu Val Lys Asp Leu Leu Gly Leu Asp Ala Val Leu
 450 455 460
 Leu Asp Tyr Pro Asn His Ile Ala Ser Ala Val Arg Phe Asn Glu Asp
 465 470 475 480
 Ile Ser Gly Asp Tyr Ile Leu Leu Asp Gly Lys Lys Tyr Leu Ile Cys
 485 490 495
 Asp Pro Thr Tyr Ile Gly Ala Pro Ile Gly Met Cys Met Asp Arg Phe
 500 505 510
 Lys Ser Val Pro Pro Glu Ile Ile Arg
 515 520

<210> 8887

<211> 103

<212> PRT

<213> B.fragilis

<400> 8887

Lys Cys Ile Met Lys Val Lys Leu Leu Phe Val Ile Cys Leu Ser Val
 1 5 10 15

Phe Ser Leu Cys Gly Ile Tyr His Val Gln Ala Asn Lys Glu Asp Lys
 20 25 30
 Asn Val Ser Thr Leu Val Leu Gln Asn Ile Glu Ser Leu Ala Gln Asn
 35 40 45
 Glu Gly Asn Ser Asp His Gly Asn Ile Asp Thr Thr Leu Glu Pro Tyr
 50 55 60
 Tyr Tyr Gln Ser Ser Arg Asp Tyr Trp Leu Pro Gly Met Asn Gly Thr
 65 70 75 80
 Thr Glu Ile Pro Cys Cys Glu Lys Cys Glu Ser Lys Tyr Ser Gly Cys
 85 90 95
 Ala Lys Gly Leu Ala Arg Cys
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<210> 8888

<211> 424

<212> PRT

<213> B.fragilis

<400> 8888

Asn Arg Val Met Arg Ile Thr Asn Leu Phe Trp Thr Val Val Leu Leu
 1 5 10 15
 Ala Pro Leu Ser Val Phe Ala Gln Gln Lys Glu Asn Leu Phe Thr
 20 25 30
 Ile Asp Ala Gln Ile Arg Thr Arg Gly Glu Tyr Arg Asn Gly Val Leu
 35 40 45
 Asn Pro Arg Pro Glu Gly Glu Glu Pro Thr Phe Phe Val Asn Glu Arg
 50 55 60
 Ala Arg Leu Ser Leu Gly Tyr Gln Arg Asp Arg Leu Gln Met Arg Leu
 65 70 75 80
 Ser Ala Gln His Val Gly Val Trp Gly Gln Asp Pro Gln Ile Asp Lys
 85 90 95
 Asn Gly Arg Phe Ile Leu His Glu Ala Trp Ala Arg Leu Asp Phe Ser
 100 105 110
 Lys Gly Leu Phe Ala Gln Leu Gly Arg Gln Pro Leu Ser Tyr Asp Asp
 115 120 125
 Glu Arg Leu Leu Gly Gly Leu Asp Trp Asn Val Ala Gly Arg Phe His
 130 135 140
 Asp Ala Leu Lys Leu Gly Tyr Glu Ser Lys Leu His Lys Leu His Leu
 145 150 155 160
 Ile Leu Ala Phe Asn Gln Asn Asp Glu Asn Arg Ser Tyr Gly Gly Thr
 165 170 175
 Tyr Tyr Ala Pro Gly Ala Gln Pro Tyr Lys Thr Met Gln Thr Val Trp
 180 185 190
 Tyr Asn Gly His Trp Ala Lys Asp Phe Thr Val Ser Leu Leu Phe Met
 195 200 205
 Asn Thr Gly Phe Glu Thr Gly Thr Glu Gly Asn Gly Lys Thr Ala Asn
 210 215 220
 Met Gln Thr Met Gly Thr Tyr Leu Val Tyr Thr Pro Gly Ala Trp Leu
 225 230 235 240
 Phe Asn Gly Ser Ala Tyr Tyr Gln Phe Gly Lys Asn Lys Ala Asp Lys
 245 250 255
 Lys Val Ser Ala Tyr Met Phe Ser Leu Lys Ala Gly Tyr Lys Ile Asp
 260 265 270
 Pro Lys Trp Ser Val Ser Leu Gly Thr Asp Tyr Leu Ser Gly Asp Pro
 275 280 285
 Asp Ser Lys Lys Val Ser Thr Phe Asp Pro Leu Tyr Gly Thr His His
 290 295 300
 Lys Phe Tyr Gly Gly Met Asp Tyr Phe Tyr Ala Ser Ala Tyr Asn Lys
 305 310 315 320

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Gly Leu Trp Asp Lys Ile Leu Ser Val Asp Phe Lys Pro Thr Lys Lys
 325 330 335
 Leu Ser Phe Ser Leu Asn Tyr His His Phe Ser Thr Thr Tyr Asp Val
 340 345 350
 Met Ala Thr Asp Gly Lys Glu Gly Arg Cys Leu Gly Ser Glu Leu Asp
 355 360 365
 Met Gln Val Asp Tyr Ile Leu Met Lys Asp Val Lys Leu Thr Ala Gly
 370 375 380
 Tyr Ser Thr Met Leu Gly Thr Lys Tyr Met Asp Ile Val Lys Gly Gly
 385 390 395 400
 Asn His Lys Ser Trp Gln Asp Trp Gly Trp Leu Thr Leu Asn Ile Asn
 405 410 415
 Pro Arg Ile Leu Phe Thr Lys Trp
 420

<210> 8889

<211> 85

<212> PRT

<213> B.fragilis

<400> 8889

Thr His Tyr Ile Pro Thr Ile Met Lys Glu Asp Lys Asp Thr Arg Val
 1 5 10 15
 Val Glu Val Phe Thr Gly Ser Pro Trp Glu Ala Glu Phe Ile Lys Gly
 20 25 30
 Leu Leu Glu Ser Asn Gly Ile Glu Ser Ile Leu Lys Asp Gly Gly Gly
 35 40 45
 Leu Ala Ala Leu Ala Pro Tyr Tyr Ile Gly Gln Glu Ile Ala Val Leu
 50 55 60
 Val Asn Glu Asp Asp Tyr Glu Asn Ala Met Glu Ile Val Arg Asn Arg
 65 70 75 80
 Glu Lys Ala Asn Glu
 85

<210> 8890

<211> 376

<212> PRT

<213> B.fragilis

<400> 8890

Ile Lys Asn Met His Ile Ile Lys Val Ile Phe Ser Leu Ala Leu Ile
 1 5 10 15
 Leu Asn Ile Cys Val Ser Cys His Glu Asn Asp Asp Thr Ala Tyr Phe
 20 25 30
 Asn Gly Lys Ile Gln Thr Ile Glu Asp Ser Ile Lys Asp Thr Lys Lys
 35 40 45
 Ala Thr Leu Lys Ile Leu Pro Leu Asp Gly Ala Asn Phe Gly Trp Leu
 50 55 60
 Ser Thr Tyr Asp Ser Leu Met Phe Phe Met Asn Pro Lys Leu Pro Asp
 65 70 75 80
 Arg Phe Tyr Asn Ile Phe Asn Ile Asp Thr Gly Lys Glu Ile Gly Thr
 85 90 95
 Phe Cys Tyr Arg Gly Ser Gly Pro Gly Glu Val Ala Ala Leu Gly Pro
 100 105 110
 Ile Phe His Phe Phe Lys Glu Lys Gly Asp Leu Lys Thr Leu Leu Phe
 115 120 125
 Ala Pro Asn Glu Glu Lys Leu Phe Ile Trp Asn Ile Thr Gln Ser Ile
 130 135 140
 Lys Arg Asp Thr Thr Val Met Asp Lys Gln Ile Ser Tyr Pro Trp Arg

114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

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 Glu Glu Asn Gly Gly Ala Pro Tyr Tyr Leu Met Phe Leu Lys Asp Glu
 165 170 175
 Asn Thr Leu Ile Thr Glu Leu Gln Ser Phe Pro Leu Asn Asp Lys Glu
 180 185 190
 Ala Thr Leu Pro Ala Tyr Gln Lys Arg Thr Leu Asp Thr Asn Lys Leu
 195 200 205
 Leu Lys Ser Phe Ser Ser Tyr Lys Lys Ser Ile Arg Asn Asp Glu Ala
 210 215 220
 Ser Ile Leu Pro Glu Ser Phe Phe Tyr Ser Asn Asp Ala Ile Lys Pro
 225 230 235 240
 Asp Gly Thr Lys Val Val Gln Ala Met Val His Leu Ala Gln Leu Asn
 245 250 255
 Ile Leu Asp Leu Glu Thr Gly His Val Ser Gly Tyr Arg Leu Glu Gly
 260 265 270
 Glu Pro Asp Phe Ser Val Phe Lys Ser Asp Glu Lys Ile Lys Ser Tyr
 275 280 285
 Phe Thr Arg Val Gln Ala Asp Asp Asn Tyr Ile Tyr Ala Val Tyr Trp
 290 295 300
 Gly Lys Glu Arg Trp Glu Arg Phe Glu Thr Pro His Met Asn Ile Ile
 305 310 315 320
 His Val Tyr Asp Trp Asp Gly Asn Leu Val Gln Lys Ile Glu Thr Asp
 325 330 335
 Tyr Ser Ile Gly Gln Met Trp Ile Asp Pro Ile Arg Asn Arg Leu Tyr
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 355 360 365
 Phe Leu Val Pro Asn Thr Gly Leu
 370 375

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 <212> PRT
 <213> B.fragilis

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 Ile Phe Thr Lys Gly Thr Asn Pro Phe Phe Gln Ser Glu Glu Glu Ile
 35 40 45
 Ser Asn Glu Ile Ala Thr Ala Leu Ile Pro Gln Leu Lys Thr Asn Lys
 50 55 60
 Phe Glu Ala Val His Phe Tyr Gly Ala Gly Cys Ala Phe Pro Asp Lys
 65 70 75 80
 Ile Glu Thr Met Arg Lys Ala Ile Ala Ser His Leu Gln Val Ser Gly
 85 90 95
 Glu Ile Glu Val Ser Thr Asp Met Leu Ala Ala Ala Arg Ser Leu Cys
 100 105 110
 Gly His Gln Pro Gly Ile Ala Cys Ile Met Gly Thr Gly Ser Asn Ser
 115 120 125
 Cys Tyr Tyr Asp Gly Lys Asn Ile Val Thr Asn Val Ser Pro Leu Gly
 130 135 140
 Phe Ile Leu Gly Asp Glu Gly Ser Gly Ala Val Leu Gly Lys Leu Leu
 145 150 155 160
 Val Gly Asp Ile Leu Lys Asn Gln Met Thr Pro Gly Leu Lys Glu Lys
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 Phe Leu Glu Gln Phe Asn Leu Thr Pro Ala Glu Ile Ile Asp Arg Val


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			20					25					30		
Ile	Lys	Met	Arg	Gln	Tyr	Leu	Leu	Asn	Ile	Ile	Leu	Leu	Phe	Leu	Gly
		35					40					45			
Phe	Thr	Ile	Ile	Tyr	Ser	Cys	Ser	Arg	His	Gln	Gln	Ile	Asn	Arg	Thr
	50					55					60				
Ile	Phe	Leu	Ala	Asp	Ser	Ile	Met	Glu	Tyr	Gln	Pro	Asp	Ser	Ala	Phe
65					70					75					80
Lys	Leu	Leu	Lys	Thr	Ile	Asn	Gln	Thr	Asp	Leu	Ser	Val	Ser	Glu	Asn
				85					90					95	
Ala	Lys	Tyr	Ala	Leu	Leu	Leu	Ala	Gln	Ala	Gln	Asp	Lys	Ala	Gly	His
			100					105					110		
Gln	Leu	Ile	Asn	Asp	Ser	Leu	Ile	Leu	Ile	Ala	Ile	Asn	His	Tyr	Asp
		115						120				125			
His	Leu	Ser	Lys	Asp	Asn	Asn	Lys	Ala	Lys	Ala	Tyr	Phe	Tyr	Leu	Gly
	130					135					140				
Arg	Phe	Tyr	Gln	Asn	Asn	Asn	Asp	Tyr	Ala	Lys	Ala	Ile	Asn	Ser	Tyr
145					150					155					160
Leu	Ile	Ala	Glu	Lys	Ala	Thr	Ser	Asp	His	Asp	Thr	Leu	Leu	Thr	Leu
				165					170					175	
Ile	Tyr	Asp	Asn	Leu	Gly	Thr	Cys	Tyr	Lys	Asn	Gln	Asp	Phe	Tyr	Asp
			180					185					190		
Lys	Ala	Leu	Glu	Val	Tyr	Lys	Asp	Ala	Tyr	Tyr	Ile	Tyr	Lys	Gln	Tyr
		195					200					205			
Asn	Ser	Lys	Asn	Ile	Leu	Tyr	Pro	Leu	Arg	Gly	Met	Ala	Ser	Ile	Tyr
	210					215					220				
Ala	Ile	Gln	Glu	Gln	Phe	Glu	Lys	Ala	Leu	Lys	Tyr	Tyr	Gln	Thr	Ala
225					230					235					240
Leu	Thr	Ile	Ala	Ser	Ser	Thr	Asn	Asp	Ser	Thr	Trp	Gln	Ser	Ile	Leu
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Phe	Cys	Asp	Ile	Ser	Arg	Ile	Tyr	Asp	Asn	Lys	Asn	Leu	Tyr	Glu	Ala
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Ala	Tyr	Ser	Tyr	Ile	Val	Arg	Ser	Ile	Gln	Tyr	Ala	Pro	Arg	Ser	Ser
		275					280					285			
Asp	Leu	Ser	Ala	Met	Tyr	Phe	Trp	Lys	Gly	Glu	Ile	Leu	His	Asn	Leu
	290					295					300				
Asn	Gln	Leu	Asp	Ser	Ala	Phe	Tyr	Tyr	Ile	Asn	Leu	Ala	Lys	Lys	Ser

305 310 315 320
 Ser Asp Leu Asn Thr Gln Ala Ser Ala Tyr Gln Ala Leu Tyr Glu Ile
 325 330 335
 Lys Lys Glu Gln Gly Glu Leu Asn Asp Ala Ile Leu Tyr Asn Asp Thr
 340 345 350
 Ser Leu Ile Leu Tyr Asp Ser Ile Gln Asp Leu Asn His Ser Ala Glu
 355 360 365
 Ile Ser His Ile Leu Lys Gln His Ala Thr Glu Thr Leu Gln Gln Ala
 370 375 380
 Glu Val Ile Lys Arg Gln Lys His Thr Ala Phe Leu Ile Val Thr Thr
 385 390 395 400
 Leu Leu Leu Ile Ala Cys Ile Thr Phe Ile Phe Leu Tyr Lys Asp Asn
 405 410 415
 Lys Arg Lys Lys Val Tyr Ile Lys Ile Gln Cys Glu Leu Arg Asn Asn
 420 425 430
 Gln Ile Glu Lys Asp Glu Leu Lys Glu Lys Ile Lys Thr Leu Ile Asp
 435 440 445
 Ser Asn Thr Tyr Ile Ala Glu Arg Asn Lys Glu Leu Lys Lys Glu Glu
 450 455 460
 Leu Lys Gln Gln Gln Ile Glu Leu Trp Lys Arg Thr Leu Gln Ile Cys
 465 470 475 480
 Thr Arg Leu Phe His Thr Ser Thr Ser Tyr Lys Lys Leu His Ala Ile
 485 490 495
 Glu Thr Ala Lys Phe Lys Lys Glu Arg Glu Glu Lys Gln Lys Glu Ile
 500 505 510
 Asn Ser Ile Gln Lys Glu Ile Asn Glu Val Phe Ile Glu Ala Ile Gln
 515 520 525
 Glu Leu Arg Glu Gln Tyr Pro Lys Leu Thr Gln Glu Asp Leu Phe Tyr
 530 535 540
 Cys Ile Leu Gln Tyr Leu Arg Leu Ser Thr Ser Thr Ile Lys Phe Cys
 545 550 555 560
 Met Arg Val Glu Ser Asn Gln Ala Leu Thr Gln Arg Lys Tyr Arg Ile
 565 570 575
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 Ser Pro Ser Glu Gly Val Leu
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<211> 437

<212> PRT

<213> B.fragilis

<400> 8893

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 Thr Ile Ser Val Ile Met Tyr Lys Asn Leu Gly Ile Ser Asn Thr Asp
 35 40 45
 Ile Ala Leu Tyr Thr Ser Trp Leu Tyr Leu Pro Trp Val Ile Lys Pro
 50 55 60
 Phe Trp Ser Pro Phe Val Asp Leu Leu Lys Thr Lys Arg Trp Trp Ile
 65 70 75 80
 Val Ser Met Gln Leu Val Gly Ala Gly Leu Ala Gly Ile Ala Phe
 85 90 95
 Thr Ile Pro Met Ser Asn Phe Phe Gln Thr Thr Leu Ala Ile Phe Trp
 100 105 110
 Leu Val Ala Phe Ser Ser Ala Thr His Asp Ile Ala Ala Asp Gly Phe

115	120	125
Tyr Met Leu Ala Leu Asn Val	Gln Asp Gln Ala Leu Tyr Val Gly Ile	
130	135	140
Arg Ser Thr Phe Tyr Arg Ile	Ala Thr Ile Ala Gly Gln Gly Leu Leu	
145	150	155
Val Met Leu Ala Gly Gly Leu Glu Ile	Trp Thr Gly Ser Ile Lys Tyr	160
	165	170
Gly Trp Ser Ile Thr Phe Phe Ile	Leu Ala Gly Leu Phe Leu Ala Phe	175
	180	185
Cys Leu Tyr His Lys Cys Ile	Leu Pro Lys Pro Asn Ser Asp Lys Ala	190
	195	200
Val Val Gly Glu Asn Ser Ala	Ser Ala Ile Phe Ser Gly Phe Ile Glu	205
	210	215
Thr Phe Ala Ser Phe Phe Arg	Lys Lys Gln Ala Gly Val Ala Ile Leu	220
225	230	235
Phe Met Leu Phe Tyr Arg Phe	Pro Glu Ala Gln Leu Val Lys Leu Ile	240
	245	250
Asn Pro Phe Leu Leu Asp Pro	Ile Asp Lys Gly Gly Leu Gly Leu Thr	255
	260	265
Thr Ala Glu Val Gly Leu Val	Tyr Gly Thr Ile Gly Ile Ile Gly Leu	270
	275	280
Thr Leu Gly Gly Ile Ile Gly	Gly Ile Cys Ala Ala Lys Gly Gly Leu	285
	290	295
Gln Lys Trp Leu Trp Pro Met	Ala Trp Ser Leu Ser Leu Thr Cys Leu	300
305	310	315
Thr Phe Val Tyr Leu Gly Tyr	Phe Gln Pro Gln Asn Phe Val Ile Ile	320
	325	330
Asn Leu Cys Val Phe Ile Glu	Gln Phe Gly Tyr Gly Phe Gly Phe Thr	335
	340	345
Ala Tyr Met Leu Tyr Leu Ile	Tyr Tyr Ser Asp Gly Glu His Lys Thr	350
	355	360
Ala His Tyr Ala Ile Cys Thr	Ala Phe Met Ala Leu Gly Met Met Leu	365
	370	375
Pro Gly Met Ala Ala Gly Trp	Leu Gln Glu Leu Ile Gly Tyr Glu Asn	380
385	390	395
Phe Phe Ile Trp Val Met Val	Cys Cys Thr Ala Thr Ile Ala Val Cys	400
	405	410
Ala Phe Ile Lys Ile Asp Pro	Asn Tyr Gly Lys Lys Ala Glu Gly Ile	415
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Pro Gln Lys Thr Lys		430
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 Leu Asn Ala Val Ala Glu Ala Ala Leu Glu Gln Thr Ser Tyr Ile Leu
 35 40 45
 Ser Glu Asn Arg Lys Asp Leu Glu Arg Met Ser Pro Asp Asn Pro Lys
 50 55 60
 Tyr Asp Arg Leu Arg Leu Thr Glu Glu Arg Leu Arg Gly Ile Ala Ser
 65 70 75 80
 Asp Ile Arg Asn Val Ala Thr Leu Pro Ser Pro Leu Gly Arg Ile Leu

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

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			20					25					30		
Phe	Arg	Val	Val	Val	Asp	Lys	Gly	Gln	Ala	Met	Val	Arg	Val	Asp	Lys
		35					40					45			
Tyr	Leu	Phe	Glu	Arg	Ile	Val	Asn	Ala	Ser	Arg	Asn	Arg	Ile	Gln	Lys
	50					55					60				
Ala	Ala	Glu	Asp	Gly	Phe	Val	Met	Ala	Asn	Gly	Lys	Pro	Val	Lys	Ser

65 70 75 80
 Ser Tyr Lys Val Lys Pro Leu Asp Val Ile Thr Val Met Met Asp Arg
 85 90 95
 Pro Arg Tyr Asp Asn Glu Ile Ile Pro Glu Asp Ile Pro Leu His Ile
 100 105 110
 Val Tyr Glu Asp Lys Tyr Leu Met Val Val Asn Lys Pro Ala Gly Leu
 115 120 125
 Val Val His Thr Gly His Gly Asn Tyr His Gly Thr Leu Val Asn Ala
 130 135 140
 Ile Ala Trp His Leu Lys Asp Asn Pro Asp Tyr Asp Ala Asn Asp Pro
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 His Val Gly Leu Val His Arg Ile Asp Lys Asp Thr Ser Gly Leu Leu
 165 170 175
 Val Ile Ala Lys Thr Pro Asp Ala
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 Val Ile Val Gly Gly Gly Ala Leu Phe Leu Tyr Met Leu Arg Ala His
 35 40 45
 Thr Tyr Leu Ala Asp Asp Pro Ser Ala Cys Val Asn Cys His Ile Met
 50 55 60
 Gly Pro Tyr Tyr Ala Thr Trp Phe His Ser Ser His Ser Arg Asn Ala
 65 70 75 80
 Thr Cys Asn Asp Cys His Val Pro His Glu Asn Pro Val Lys Lys Trp
 85 90 95
 Val Phe Lys Gly Met Asp Gly Met Arg His Val Ala Val Phe Leu Thr
 100 105 110
 Arg Gly Glu Lys Asp Val Leu Arg Ala Asn Lys Glu Ser Ala Glu Val
 115 120 125
 Ile Met Asn Asn Cys Ile Arg Cys His Thr Gln Leu Asn Thr Glu Phe
 130 135 140
 Val Asn Thr Gly Arg Ile Asp Tyr Met Met Ser Gln Val Gly Glu Gly
 145 150 155 160
 Lys Ala Cys Trp Asp Cys His Arg Asp Val Pro His Gly Gly Ser Asn
 165 170 175
 Ser Ala Ala Ser Thr Pro Asp Ala Leu Val Pro Tyr Pro Asp Ser Pro
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 Thr Pro Glu Trp Leu Arg Lys Met Ile Glu
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 35 40 45
 His Tyr Arg Thr Asp Pro Glu Lys Leu Glu Ala Ala Arg Phe Leu Ile
 50 55 60
 Arg Asn Met Pro Gly Trp Tyr Ser Tyr Glu Gly Asn Glu Leu Asp Ser
 65 70 75 80
 Ile His His Leu Leu Val Gly Val Cys Glu Gly Arg Ser Ile Ser Lys
 85 90 95
 Arg Glu Lys Asn Lys Trp Asn Arg Ile Ser Phe Asn Ser Leu Ser Lys
 100 105 110
 Ile Tyr Asp Ala Gln Val Ile Thr Ala Glu Tyr Leu Ile Asp Asn Ile
 115 120 125
 Asp Leu Ala Phe Glu Val Trp Arg Lys Tyr Pro Trp Asn Arg Asn Leu
 130 135 140
 Pro Phe Asp Asp Phe Cys Glu Leu Ile Leu Pro Tyr Arg Ile Ala Asp
 145 150 155 160
 Glu Pro Leu Ser Asp Trp Arg Lys Leu Tyr Tyr Glu Asp Tyr Gly Thr
 165 170 175
 Leu Leu Asp Ser Leu Tyr Lys Gly Ser Asp Val Ile Glu Ala Ser Lys
 180 185 190
 Ile Ile Asp Gly Lys Leu Arg Lys Leu Tyr Tyr Ile Tyr Asn Thr Asp
 195 200 205
 Phe Arg Val Pro His Leu Asn Ala Val Phe Leu Tyr His Asn Arg Ile
 210 215 220
 Gly Tyr Cys Arg Glu Ala Cys Asp Leu Thr Ile Tyr Ala Met Arg Ala
 225 230 235 240
 Cys Gly Ile Pro Val Ala Thr Asp Tyr Phe Val Tyr Ser Pro Asp Tyr
 245 250 255
 Gln His Tyr His Cys Trp Thr Met Leu Arg Asp Thr Thr Gly Thr Phe
 260 265 270
 Leu Gln Phe Gly Phe Asn Glu Phe Glu Ala Ser Arg Asp Thr Leu Arg
 275 280 285
 His Asp Gly Arg Lys Lys Gly Lys Val Tyr Arg Tyr Cys Phe Gly Met
 290 295 300
 Gln Ala Asp Lys Asn Ser Gly Thr Ser Gly Asn Arg Gln Leu Ser Pro
 305 310 315 320
 Val Leu Lys Asn Arg Phe Val Lys Asp Val Thr Ser Glu Tyr Phe Gly
 325 330 335
 Ser Asn Asp Thr Thr Ile Pro Ile Gln Met Ser Gly Glu Gln Tyr Ile
 340 345 350
 Tyr Leu Gly Ile Phe Ser Pro Gly Gly Trp Ile Pro Ile Asp Met Ala
 355 360 365
 Leu Gly Asn Ala Gly Lys Val Thr Phe Arg Asp Ile Glu Pro Asp Val
 370 375 380
 Ile Tyr Gln Thr Leu Tyr Gln Gly Asp Gly Gly Lys Leu Tyr Pro Ala
 385 390 395 400
 Gly Tyr Pro Phe Ile Ser Lys Thr Gly Gly Gly Phe Val Leu Leu Lys
 405 410 415
 Pro Asn Ile Asp Leu Met Glu Glu Ala Ile Leu Lys Arg Lys Met Pro
 420 425 430
 Gln Gln Lys Thr Ile Ala Glu Trp Ala Tyr Arg Ala Ile Ile Gly Ala
 435 440 445
 Lys Val Glu Ala Ala Asp Asp Leu Ser Phe Met Gln Ala Asp Leu Leu
 450 455 460
 Trp Gln Phe Glu Asp Thr Leu Thr Thr Asn Tyr Cys Val Leu Thr Pro
 465 470 475 480
 Leu Leu Arg Lys Lys Tyr Arg Tyr Val Arg Tyr Val Ala Pro Ile Gly
 485 490 495
 Lys Arg Met Glu Leu Ala Glu Leu Ala Leu Phe Lys Asp Ser Leu Cys

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	515		520		525											
Lys	Leu	Glu	Tyr	Val	Thr	Asp	Gly	Asn	Ile	Leu	Thr	Tyr	Phe	Gln	Ala	
	530		535		540											
Arg	Asp	Thr	Ser	Cys	Tyr	Leu	Ala	Tyr	Asp	Leu	Gly	Glu	Ser	Thr	Leu	
545					550				555						560	
Ile	Glu	Arg	Ile	Val	Phe	Ser	Pro	Arg	Asn	Asp	Asp	Asn	Tyr	Ile	Trp	
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Pro	Gly	Asp	Asn	Tyr	Glu	Leu	Phe	Tyr	Gln	Asp	Gly	Ile	Asn	Gly	Trp	
			580					585					590			
Lys	Ser	Leu	Gly	Ser	Lys	Val	Ala	Thr	Glu	Arg	Glu	Ile	Asp	Phe	Leu	
	595		600					605								
Val	Pro	Gln	Asn	Ala	Leu	Leu	Trp	Leu	Arg	Asn	Arg	Thr	Lys	Gly	Arg	
	610		615					620								
Glu	Glu	Gln	Val	Phe	Ile	Tyr	Lys	Asn	Gly	Arg	Gln	Tyr	Phe	Ala	Phe	
625			630					635					640			
Asp	Leu															

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<212> PRT

<213> B.fragilis

<400> 8898

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Arg	Phe	Phe	Trp	Ile	Asn	Ile	Ile	Ala	Met	Val	Val	Val	Ala	Val	Leu
			20					25					30		
Ile	Val	Val	Gly	Thr	Leu	Lys	Gly	Leu	Asp	Ile	Tyr	Thr	Arg	His	Gly
			35				40					45			
Glu	Ala	Val	Ile	Val	Pro	Asp	Val	Lys	Gly	Met	Ser	Val	Ser	Glu	Ala
	50					55				60					
Glu	Lys	Met	Phe	Arg	Asn	His	Gly	Leu	Thr	Cys	Val	Val	Ser	Asp	Ser
65					70					75				80	
Ser	Tyr	Val	Lys	Asn	Lys	Pro	Ser	Gly	Ile	Ile	Leu	Asp	Leu	Asn	Pro
			85					90						95	
Ser	Val	Gly	Gln	Lys	Val	Lys	Glu	Gly	Arg	Thr	Ile	Tyr	Leu	Thr	Ile
			100					105					110		
Asn	Thr	Leu	Ser	Thr	Pro	Leu	Ser	Val	Val	Pro	Asp	Val	Ala	Asp	Asn
			115					120					125		
Ser	Ser	Val	Arg	Gln	Ala	Gln	Ala	Lys	Leu	Ile	Ala	Ala	Gly	Phe	Lys
			130				135					140			
Leu	Thr	Glu	Asn	Arg	Met	Val	Ser	Gly	Glu	Lys	Asp	Trp	Val	Tyr	Gly
145					150					155				160	
Val	Ile	Tyr	Gln	Gly	Arg	Gln	Leu	Gln	Ile	Gly	Asp	Lys	Ala	Pro	Ile
				165					170					175	
Gly	Ala	Thr	Leu	Thr	Leu	Met	Val	Gly	Asp	Gly	Val	Gln	Ser	Thr	Ala
			180					185					190		
Thr	Asp	Ser	Val	Asp	Met	Val	Glu	Asn	Ala	Ala	Met	Ser	Val	Glu	Asp
		195					200					205			
Ser	Gly	Thr	Asp	Asp	Asp	Ser	Trp	Phe							
	210						215								

<210> 8899

<211> 1027

<212> PRT

<213> B.fragilis

<400> 8899

Leu Asn Ile Ile Met Lys Pro Ile Leu Thr Ser Leu Ile Leu Leu Leu
 1 5 10 15
 Thr Ala Gly Leu Phe Pro Gln Ala Ala Thr Gln Glu Leu Ser Lys
 20 25 30
 Glu Leu Arg Ser Gln Ile Gly Asp Phe Leu Asn Gly Thr Ala Arg Lys
 35 40 45
 Glu Ile Ser Val Gly Lys Ile His Ile Asp Ser Val Asn Thr Glu Gly
 50 55 60
 Asn Asp Leu Ile Leu Phe Ala Asn Ile Asn Cys Ser Tyr Ile Pro Phe
 65 70 75 80
 Arg Thr Asp Asn Val Ser Lys Ile Tyr Gln Gly Ile Lys Ala Leu Leu
 85 90 95
 Pro Pro Glu Leu Ala Lys Arg Lys Leu Gln Ile Arg Thr Asp His His
 100 105 110
 Ala Ile Glu Glu Leu Ile Pro Leu Ala Leu Arg Asn Thr Arg Gly Arg
 115 120 125
 Lys Ile Pro Thr Phe Ser Tyr Lys Ala Asp Thr Pro Leu Ile Thr Arg
 130 135 140
 Leu Ser Val Pro Tyr Thr Pro Thr Asn Gly Leu Gln Asn Arg His Ile
 145 150 155 160
 Ala Leu Trp Gln Ser His Gly Phe Tyr Tyr Glu Ser Lys Leu Ala Arg
 165 170 175
 Trp Glu Trp Gln Arg Ala Arg Ile Phe Gln Thr Val Glu Asp Leu Tyr
 180 185 190
 Thr Gln Ser Tyr Val Leu Pro Phe Leu Val Pro Met Leu Glu Asn Ala
 195 200 205
 Gly Ala Thr Ile Leu Leu Pro Arg Glu Arg Asp Pro Gln Thr Val Glu
 210 215 220
 Ile Ile Val Asp Asn Asp Arg Cys Arg Asp Gly His Ser Val Tyr Ser
 225 230 235 240
 Glu Leu Asn Gly Ser Lys Met Trp Lys Asn Gly Glu Glu Ala Gly Phe
 245 250 255
 Ala His Leu Lys Arg Thr Tyr Lys Asp Phe Glu Asn Pro Phe Arg Glu
 260 265 270
 Gly Thr Tyr Arg Gln Val Glu Thr Thr Lys Lys Gly Thr Val Ser Val
 275 280 285
 Ala Glu Trp Ile Pro Glu Ile Pro Arg Ala Gly Arg Tyr Ala Val Tyr
 290 295 300
 Ile Ser Tyr Lys Thr Val Asn Asn Ser Thr Glu Asp Ala Leu Tyr Thr
 305 310 315 320
 Val Tyr His Gln Gly Gly Lys Ser Gln Phe Lys Val Asn Gln Gln Met
 325 330 335
 Gly Gly Gly Thr Trp Ile Tyr Leu Gly Thr Phe Ser Phe Gly Ile Gly
 340 345 350
 Lys Thr Asp Cys Lys Ile Val Leu Ser Asn Gln Ser Ala Lys Glu Gly
 355 360 365
 Arg Leu Val Thr Ala Asp Ala Val Lys Ile Gly Gly Gly Tyr Gly Asn
 370 375 380
 Ile Ala Arg Ser Ile Ser Glu Glu Gly Val Thr Val Asn Thr Lys Ser
 385 390 395 400
 Ser Asp Thr Met Ile Thr Asp Thr Tyr His Pro Lys Ala Gln Val Asn
 405 410 415
 Tyr Pro Tyr Glu Ile Ser Gly Tyr Pro Arg Phe Cys Glu Ala Ala Arg
 420 425 430
 Tyr Trp Met Gln Trp Ala Gly Ile Pro Asp Ser Val Tyr Ser Asp Ser
 435 440 445
 His Gly Lys Asn Asp Tyr Thr Asp Asp Tyr Lys Ser Arg Gly Ile Trp

450	Val	Asn	Tyr	Leu	Ala	Gly	Gly	Ser	Ala	Ala	Asn	Pro	Thr	Glu	Lys	Gly
465	Leu	Asn	Ile	Pro	Val	Asp	Met	Ala	Phe	Ala	Phe	His	Ser	Asp	Ala	Gly
				485						490					495	
Thr	Thr	Tyr	Gly	Asp	Thr	Ile	Ile	Gly	Thr	Leu	Gly	Ile	Phe	His	Thr	
			500					505					510			
Ser	Ala	Tyr	Asn	Gly	Ala	Tyr	Ala	Asn	Gly	Ala	Ser	Arg	Tyr	Ala	Ser	
			515					520				525				
Arg	Asp	Leu	Cys	Asp	Leu	Val	Gln	Ser	Asn	Ile	Val	Lys	Asp	Val	Arg	
							535					540				
Thr	Leu	Tyr	Glu	Pro	Glu	Trp	Thr	Arg	Arg	Gly	Met	Trp	Asn	Gln	Ser	
545						550				555					560	
Tyr	Tyr	Glu	Ala	Arg	Val	Pro	Arg	Val	Pro	Thr	Met	Leu	Leu	Glu	Leu	
				565					570					575		
Leu	Ser	His	Gln	Asn	Phe	Ala	Asp	Met	Arg	Tyr	Gly	Leu	Asp	Pro	Arg	
				580				585					590			
Phe	Arg	Phe	Thr	Val	Ser	Arg	Ala	Ile	Tyr	Lys	Gly	Ile	Leu	Gln	Phe	
				595				600				605				
Ile	Cys	Ser	Gln	Tyr	Lys	Met	Glu	Tyr	Val	Val	Gln	Pro	Leu	Pro	Val	
610						615					620					
Asp	His	Met	Ser	Leu	Arg	Phe	Glu	Glu	Gly	Asn	Arg	Ile	Lys	Leu	Ser	
625						630				635					640	
Trp	Gln	Pro	Val	Asp	Pro	Leu	Glu	Thr	Thr	Ala	Lys	Ala	Asp	Gln		
				645				650					655			
Tyr	Ile	Val	Tyr	Thr	Arg	Ile	Gly	Asp	Ser	Asp	Phe	Asp	Asn	Gly	Val	
			660					665					670			
Ile	Val	Asn	Ser	Pro	Thr	Tyr	Gln	Thr	Val	Ile	Pro	Ser	Gly	Val	Val	
			675				680					685				
Cys	Ser	Phe	Lys	Val	Thr	Ala	Leu	Asn	Lys	Gly	Gly	Glu	Ser	Phe	Pro	
690						695				700						
Ser	Glu	Ile	Leu	Ser	Ile	Gly	Lys	Thr	Phe	Asn	Asp	Lys	Gly	Thr	Val	
705					710					715					720	
Leu	Ile	Ile	Asn	Gly	Phe	Asp	Arg	Val	Cys	Ala	Pro	Ala	Asp	Phe	Thr	
				725				730						735		
Ala	Asp	Ala	Asp	Thr	Leu	Ala	Gly	Phe	Leu	Asp	Glu	Leu	Asp	His	Gly	
				740				745					750			
Val	Pro	Tyr	Lys	Thr	Asp	Ile	Ser	Tyr	Ile	Gly	Pro	Met	Lys	Glu	Phe	
			755				760					765				
Arg	Arg	Gln	Ile	Pro	Trp	Met	Asp	Asp	Asp	Ala	Ser	Gly	Phe	Gly	Asp	
770						775					780					
Ser	Tyr	Gly	Thr	His	Glu	Thr	Met	Val	Ile	Ala	Gly	Asn	Thr	Phe	Asp	
785					790					795					800	
Tyr	Pro	Ala	Ile	His	Gly	Glu	Ala	Ile	Leu	Lys	Ala	Gly	Tyr	Ser	Phe	
				805				810						815		
Thr	Ser	Cys	Ser	Asp	Glu	Ser	Ile	Val	His	Pro	Asp	Ser	Ser	Pro	Lys	
				820				825					830			
Glu	Arg	Glu	Thr	Gln	Ile	Cys	Met	Asn	Asp	Tyr	Lys	Tyr	Val	Asp	Leu	
				835			840					845				
Ile	Leu	Gly	Lys	Gln	Cys	Gln	Thr	Lys	Met	Gly	Arg	Gly	Gly	Ile	Arg	
850						855					860					
Pro	Leu	Glu	Phe	Lys	Thr	Phe	Ser	Lys	Glu	Met	Gln	Asn	Ala	Ile	Thr	
865					870					875					880	
Asn	Tyr	Cys	Gln	Ala	Gly	Gly	Asn	Phe	Phe	Val	Ser	Gly	Ala	Tyr	Val	
				885				890						895		
Ala	Ser	Asp	Leu	Trp	Asp	Asn	Arg	Leu	Val	Lys	Ala	Asn	Glu	Glu	Asp	
			900				905					910				
Lys	Lys	Phe	Ala	Met	Glu	Val	Leu	Lys	Tyr	Lys	Trp	Arg	Val	Gly	Gln	
			915				920					925				

Ala Ala Arg Asn Gly Lys Val Lys Ser Val Ala Ser Pro Phe Pro Glu
 930 935 940
 Ile Thr Gly Ser Tyr Thr Tyr Tyr Gln Asp Leu Asn Pro Glu Ser Tyr
 945 950 955 960
 Val Val Glu Ser Pro Asp Ala Leu Glu Pro Ala Ala Gln Gly Ala Phe
 965 970 975
 Thr Ile Leu Arg Tyr Ser Glu Asn Asn Leu Ser Ala Gly Ile Ala Tyr
 980 985 990
 Lys Gly Asn Tyr Lys Thr Cys Val Leu Gly Phe Pro Phe Glu Ala Ile
 995 1000 1005
 Arg Thr Val Thr Glu Arg Glu Leu Leu Met Lys Ala Ile Leu Thr Phe
 1010 1015 1020
 Phe Glu His
 1025

<210> 8900
 <211> 87
 <212> PRT
 <213> B.fragilis

<400> 8900
 Lys Met Val Ile Ile Leu Phe Ile Lys Val Tyr Asp Met Gly Glu Ile
 1 5 10 15
 Lys Leu Ile Ser Ser Leu Phe Val Gln Lys Arg Ser Leu Gly Asn
 20 25 30
 Cys Val Lys Ser Asn Glu Ser Ile Val Tyr Leu His Val Ala Gln Leu
 35 40 45
 Asp Asn Val Arg Leu Leu Leu Ile Lys Phe Ile Asp Glu Thr Gly Gly
 50 55 60
 Arg Lys Ile Ile Phe Tyr Leu Gln Ser Thr Leu Phe Leu Ile Phe Phe
 65 70 75 80
 Ala Lys Glu Asn Asp Glu Gln
 85

<210> 8901
 <211> 342
 <212> PRT
 <213> B.fragilis

<400> 8901
 His Asn Pro Met Ile Lys Glu Gln Val Lys Ser Leu Trp Lys Leu Cys
 1 5 10 15
 Phe Asp Asp Ser Glu Ala Phe Ile Glu Leu Tyr Phe Arg Leu Arg Tyr
 20 25 30
 Asn Asn Glu Val Asn Leu Ala Ile Gln Ser Gly Glu Glu Val Ile Ala
 35 40 45
 Ala Leu Gln Met Leu Pro Tyr Pro Met Thr Phe Cys Asn Lys Ile Val
 50 55 60
 Pro Thr Ser Tyr Ile Ser Gly Ala Cys Thr His Pro Asp Tyr Arg Ala
 65 70 75 80
 Lys Gly Val Met Arg Glu Leu Leu Ser Gln Ser Phe Ala Arg Met Leu
 85 90 95
 Arg Asn Gly Val Leu Phe Ser Thr Leu Ile Pro Ala Glu Pro Trp Leu
 100 105 110
 Phe Gly Tyr Tyr Ala Lys Thr Gly Tyr Thr Pro Ala Phe Arg Ile Ser
 115 120 125
 His Lys Val Phe Ser Leu Ser Glu Leu Thr Ile Gly Pro Glu Pro Asp
 130 135 140
 Thr Met Ile Glu Glu Thr Thr Glu Tyr Gln Glu Asp Tyr Tyr Gln Tyr

145 150 155 160
 Leu Thr Gly Lys Leu Ser Glu Arg Ala Cys Cys Leu Gln His Thr Pro
 165 170 175
 Thr Asp Phe Lys Val Val Leu Ala Asp Leu Ala Leu Thr Gln Asn Thr
 180 185 190
 Val Leu Ile Ala Arg Lys Asp Asn Arg Val Thr Gly Ile Ala Val Ala
 195 200 205
 Tyr Lys His Asp Asp Ser Ser Tyr Ile Asn Glu Leu Phe Ala Asp Asn
 210 215 220
 Glu Ala Val Arg Ala Gln Leu Leu Tyr Arg Ala Gly Leu Arg Asn Gly
 225 230 235 240
 Thr Glu Arg Ile Ile Leu Gln Leu Pro Pro Val Glu Ser Leu Pro Ser
 245 250 255
 Val Pro Leu Gly Met Ala Arg Ile Ile Asp Ala Arg Ala Val Leu Gln
 260 265 270
 Leu Tyr Ala Ala Gly Cys Pro Glu Val Glu Met Asn Ile Glu Leu Thr
 275 280 285
 Asp Glu Gln Leu Ser Val Asn Asn Gly Tyr Tyr Tyr Leu Cys Lys Gly
 290 295 300
 Lys Cys Met Thr Ser Glu Val Arg Leu Pro Gly Val His Thr Arg Met
 305 310 315 320
 Thr Ile Ala Glu Leu Ser Glu Lys Ile Leu Asp Glu Met Gln Pro Tyr
 325 330 335
 Met Ser Leu Met Met Asn
 340

<210> 8902
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 8902
 Glu Asn Lys Met Lys Thr Arg Met Lys Ile Thr Ile Ala Phe Val Ala
 1 5 10 15
 Val Met Val Leu Ser Phe Thr Gly Tyr Asn Val Tyr Lys Thr Gln Lys
 20 25 30
 Ala Ile Gln Leu Ser Asp Val Ala Met Ala Asn Val Glu Ala Leu Ala
 35 40 45
 Asp Gly Glu Gly Thr Asn Ala Gly Tyr Cys Tyr Leu Glu Asp Thr Trp
 50 55 60
 Ser Thr Lys Arg Gly Tyr Lys Tyr Phe Cys Asp Ser Lys Thr Asp Lys
 65 70 75 80
 Asn Thr Ile Tyr Pro Cys Pro Ser Ser Met Glu Ser Gly Trp Tyr Asp
 85 90 95
 Asp Asn Lys Gln Asp Arg Cys Thr Lys
 100 105

<210> 8903
 <211> 313
 <212> PRT
 <213> B.fragilis

<400> 8903
 Glu Thr Lys Met Asn Lys Glu Ile Glu Thr Leu Leu Ser Glu Gln Leu
 1 5 10 15
 Ser Ser Trp Glu Thr Ala Gln Asn Asn Tyr Ala Val Leu Lys Arg Val
 20 25 30
 Arg Ile Lys Asp Val Lys Val Asn Gly Cys Leu Tyr Arg Ile Gln Phe
 35 40 45

Asn Pro Ala Arg Ile Val Ser Ser Ala Ala Lys Val Asp Asp Lys Ser
 50 55 60
 Ile Gln Glu Arg Lys Cys Phe Leu Cys Pro Ala Asn Leu Pro Pro Met
 65 70 75 80
 Gln Lys Gly Ile Pro Phe Gly Glu His Tyr Gln Ile Leu Val Asn Pro
 85 90 95
 Phe Pro Ile Phe Pro Lys His Leu Thr Val Pro Glu Leu Gln His Val
 100 105 110
 Glu Gln Arg Ile Leu His Arg Phe Ser Asp Met Leu Asp Leu Ala Thr
 115 120 125
 Tyr Ala Glu Asp Tyr Ile Ile Phe Tyr Asn Gly Pro Gln Cys Gly Ala
 130 135 140
 Ser Ala Pro Asp His Leu His Phe Gln Ala Gly Asn Lys Gly Phe Leu
 145 150 155 160
 Pro Ile Glu Gln Glu Trp Lys Glu Lys Arg Gly Glu Lys Val Ile Thr
 165 170 175
 Cys Lys Asp Ala Thr Leu Trp Ala Leu Asn Asp Tyr Pro Arg Ala Thr
 180 185 190
 Leu Val Ile Glu Ala Gly Ser Lys Glu Thr Ala Ile Met Leu Phe Asn
 195 200 205
 Thr Val Tyr Gln Ala Met Pro Ser Thr Ser Gly Glu Asp Glu Pro Met
 210 215 220
 Met Asn Val Leu Val Trp Lys Glu Gln Lys Asn Trp Ile Val Cys Ile
 225 230 235 240
 Phe Pro Arg Asn Lys His Arg Pro Ser Cys Tyr Thr Ala Glu Gly Asp
 245 250 255
 Thr Asn Ile Leu Ile Ser Pro Ala Ser Val Asp Met Gly Gly Val Phe
 260 265 270
 Ile Thr Pro Gln Glu Lys Asp Phe Glu Lys Ile Thr Ala Asn Asp Ile
 275 280 285
 Ala Asp Ile Leu Gly Glu Val Cys Leu Arg Pro Ala Ala Phe Arg Ile
 290 295 300
 Leu Ile Glu Arg Ile Lys Gln Gln Leu
 305 310

<210> 8904

<211> 249

<212> PRT

<213> B.fragilis

<400> 8904

Lys Ala Val Val Asp Val Cys Gln Ser Val Asp Gln Leu Phe Gly Arg
 1 5 10 15
 Ser Ser Met Arg Ile Trp Thr Leu His Ile Val Leu Ser Val Leu Phe
 20 25 30
 Ser Val Phe Leu Phe Ser Cys Asn Glu Asp Asp Gly Ala Pro Tyr Pro
 35 40 45
 Ser Val Arg Leu Glu Phe Leu Thr Ala Glu Ser Gly Ala Asp Gly Arg
 50 55 60
 Leu Gln Thr Leu Val Thr Asp Lys Gly Glu Arg Leu Val Val Ala Glu
 65 70 75 80
 Asp Arg Thr Glu Ser Glu Leu Leu Pro Asn Ser Ser Ser Arg Val Val
 85 90 95
 Ser Asn Tyr Glu Val Leu Ser Ser Val Gly Gly Arg Lys Glu Ile Arg
 100 105 110
 Ile Tyr Ala Leu Ala Asn Thr Val Ser Pro Val Pro Leu Pro Ala Gly
 115 120 125
 Glu Phe Arg Asn Gly Leu Lys Phe Asp Pro Val Asp Met Leu Ser Ile
 130 135 140

Trp Met Gly Arg Asp Tyr Leu Asn Met Thr Leu Ser Ile Arg Ala Gln
 145 150 155 160
 Asn Ala Arg His Thr Phe His Phe Ile His Glu Ser Val Glu Arg Asp
 165 170 175
 Ala Val Thr Gly Lys Leu Lys Val His Leu Met Leu Tyr His Asp Asp
 180 185 190
 Gly Gly Asp Val Glu Ala Tyr Ala Lys Arg Ala Tyr Val Ser Val Pro
 195 200 205
 Leu Arg Gln Tyr Thr Ser Asp Ile Gly Glu Ser Ala Ile Ile Tyr Phe
 210 215 220
 Asn Phe His Thr Tyr Asp Gly Glu Val Gln Thr Tyr Gln Phe Glu Tyr
 225 230 235 240
 Val Pro Ser His Leu Thr Ile Asn Tyr
 245

<210> 8905

<211> 164

<212> PRT

<213> B.fragilis

<400> 8905

Lys Val Tyr Val Ile Leu Gln Phe Asp Arg Phe Ser Arg Phe Lys Arg
 1 5 10 15
 Ala Asn Ile Glu Asn Val Pro Tyr Ile Cys Asp Ser Ser Val Ile Tyr
 20 25 30
 Leu Gly Met Leu Ser Tyr Ile Lys Lys Tyr Pro Val Ser Leu Phe Ile
 35 40 45
 Ile Leu Ala Val Ile Tyr Leu Ser Phe Phe Lys Pro Pro Ser Thr Glu
 50 55 60
 Ile Ser Lys Ile Pro Asn Ile Asp Lys Val Val His Ile Cys Met Tyr
 65 70 75 80
 Phe Gly Met Ser Gly Met Leu Trp Leu Glu Phe Leu Arg Ala His Arg
 85 90 95
 Arg Asp His Thr Pro Val Trp His Ala Trp Val Gly Ala Phe Ile Cys
 100 105 110
 Pro Val Leu Phe Ser Gly Cys Val Glu Leu Leu Gln Glu Tyr Cys Thr
 115 120 125
 Thr Tyr Arg Gly Gly Asp Trp Met Asp Phe Ala Ala Asn Thr Thr Gly
 130 135 140
 Ala Val Leu Ala Ser Leu Ile Gly Tyr Phe Ile Ile Arg Pro Arg Ile
 145 150 155 160
 Leu Ser Lys Lys

<210> 8906

<211> 63

<212> PRT

<213> B.fragilis

<400> 8906

Ile Leu Arg Val Gly Val His Leu Ala Tyr Ser Lys Glu Pro Val Ser
 1 5 10 15
 Ser Gly Lys Ser Ala Asp Ile Gln Val Thr Tyr Arg Ala Glu His Pro
 20 25 30
 Glu His Phe Glu Lys Thr Ile Thr Val Tyr Cys Asn Thr Ser Thr Ser
 35 40 45
 Pro Ile Arg Leu Lys Ile Arg Gly Asn Ala Val Asp Lys Glu Asn
 50 55 60

<210> 8907
 <211> 323
 <212> PRT
 <213> B.fragilis

<400> 8907

Gln Asn Ser Phe Ile Phe Val Ile Tyr Lys Gln Leu Lys Gly Asn Asn
 1 5 10 15
 Asn Phe Met Ile Ala Phe Arg Asp Ile Thr Ile Gln Asp Lys Asp Thr
 20 25 30
 Ile Thr Ala Tyr Thr Met Asn Ser Cys Arg Arg Asn Cys Asp Leu Ser
 35 40 45
 Phe Ser Asn Leu Cys Ser Trp Arg Phe Leu Tyr His Thr Lys Phe Ala
 50 55 60
 Ile Ile Asn Asn Phe Leu Val Phe Lys Phe Trp Ala Gly Asp Glu Leu
 65 70 75 80
 Ala Tyr Met Met Pro Val Gly Glu Gly Asn Leu Glu Glu Val Leu Asn
 85 90 95
 Glu Leu Ile Glu Asp Ala Arg Gln Glu Gly Glu Pro Phe Cys Met Leu
 100 105 110
 Gly Val Cys Ser Cys Met Arg Glu Asp Leu Glu Ala Ile Met Pro Gly
 115 120 125
 Gln Phe Gly Phe Thr Val Asp Arg Asp Tyr Ala Asp Tyr Ile Tyr Leu
 130 135 140
 Arg Ser Asp Leu Ala Thr Leu Lys Gly Lys Lys Phe Gln Ser Lys Arg
 145 150 155 160
 Asn His Ile Asn Lys Phe Arg Asn Thr Tyr Pro Asp Tyr Glu Tyr Ser
 165 170 175
 Pro Ile Thr Lys Asp Arg Ile Gln Glu Cys Leu Glu Leu Glu Ala Lys
 180 185 190
 Trp Cys Lys Ala Asn Asp Cys Asp Gln Gln Glu Gly Thr Gly Asn Glu
 195 200 205
 Arg Arg Ala Leu Ile Tyr Ala Leu Asn His Phe Glu Glu Leu Gly Leu
 210 215 220
 Thr Gly Gly Ile Leu His Val Asn Gly Gln Ile Val Ala Phe Thr Phe
 225 230 235 240
 Gly Met Pro Ile Asn Lys Glu Thr Phe Gly Val His Val Glu Lys Ala
 245 250 255
 Asp Thr Ser Ile Asp Gly Ala Tyr Ala Met Ile Asn Tyr Glu Phe Ala
 260 265 270
 Asn His Ile Pro Glu Gln Tyr Ile Tyr Ile Asn Arg Glu Glu Asp Leu
 275 280 285
 Gly Ile Glu Gly Leu Arg Lys Ala Lys Leu Ser Tyr His Pro Glu Thr
 290 295 300
 Ile Leu Glu Lys Tyr Met Ala Cys Leu Lys Glu Gln Pro Val Glu Met
 305 310 315 320
 Ile Lys Trp

<210> 8908
 <211> 455
 <212> PRT
 <213> B.fragilis

<400> 8908

Cys His Thr Val Val Phe Gln Cys Leu Met Val Asn Ser His Thr Val
 1 5 10 15
 Arg Ser Thr Asp Gly Val Leu Thr Thr Val Thr Phe Thr Asp Thr Val
 20 25 30

Phe Phe Ile Ile Leu Ala Met Glu Val Glu Leu Lys Ile Val Asn Asp
 35 40 45
 Leu Thr Ser Leu Phe Arg Gln Ser Val Phe Leu Tyr Gln Arg His Tyr
 50 55 60
 Ser Gln Phe His Arg Cys Gln Cys Ser Arg Gln Phe Gln Tyr Asn Ala
 65 70 75 80
 Ala Phe Thr Ile Phe Gln Leu Leu Phe Ala Ile Ser Ser Arg His Asn
 85 90 95
 Thr Glu Glu His Thr Ile Asn Thr Asp Arg Arg Phe Asp Tyr Val Arg
 100 105 110
 Ser Ile Arg Phe Val Gln Phe Arg Ile Glu Ile Leu Asn Ala Leu Ser
 115 120 125
 Arg Lys Phe Phe Val Leu Arg Lys Val Glu Ile Arg Thr Gly Val Asn
 130 135 140
 Thr Phe Tyr Phe Phe Glu Thr Lys Trp His Gln Glu Leu Asn Val Ser
 145 150 155 160
 Ser Gly Val Cys Ile Val Ser Gln Phe Ile Val Ile Val Glu Thr Ile
 165 170 175
 Met Ile Val Thr Lys Ala Gln Cys Leu Val Pro Leu Gln Thr Asn Phe
 180 185 190
 Phe Pro Phe Leu Glu Ile Phe Gln Phe Ala Ala Arg Thr Asn Lys Glu
 195 200 205
 Leu His Leu His Leu Phe Glu Leu Thr His Thr Glu Asp Glu Leu Thr
 210 215 220
 Gly Tyr Asn Leu Val Thr Glu Ser Phe Thr Asp Leu Ser Asp Thr Glu
 225 230 235 240
 Arg Asn Phe His Ala Ala Gly Arg Leu Tyr Val Gln Ile Ile Asp Lys
 245 250 255
 Asp Thr Leu Cys Arg Leu Arg Thr Lys Ile Asp Phe His Arg Thr Ile
 260 265 270
 Gly Ser Arg Thr His Ile Gly Arg Glu His Gln Ile Glu Leu Thr Asn
 275 280 285
 Phe Cys Pro Ile Leu Ser Thr Gly Asn Arg Ala Ser Tyr Phe Phe Val
 290 295 300
 Asn Asn Asp Leu Thr Glu Leu Phe Gln Ile Val Ile Val Gln Arg Phe
 305 310 315 320
 Cys Glu Thr Phe Val Gln Cys Ile Thr Leu Cys Leu Met Leu Lys Asn
 325 330 335
 Thr Pro Ile Gly Ala Ala Glu Leu Ser Phe Val Glu Ser Phe Thr Lys
 340 345 350
 Ser Phe Gly Ser Phe Gly His Leu Phe Ile Asn Leu Ile Ile Val Leu
 355 360 365
 Ser Gln Leu Ile Phe Asn Gln His Ile Gly Thr Val Ala Phe Phe Arg
 370 375 380
 Val Phe Ile Ile Asn Gln Arg Ile Val Lys Cys Ile His Met Ser Gly
 385 390 395 400
 Ser Leu Pro Asp Gly Arg Val His Lys Asp Cys Arg Val Asn Thr Asp
 405 410 415
 Asn Val Phe Val Gln Gln His His Ala Val Pro Pro Val Phe Phe Asn
 420 425 430
 Ile Val Phe Gln Phe Asn Thr His Leu Ser Val Val Ile His Arg Ala
 435 440 445
 Gln Ser Val Val Asp Ile Ala
 450 455

<210> 8909

<211> 112

<212> PRT

<213> B.fragilis

<400> 8909

Glu	Arg	Gly	Phe	Ser	Thr	Phe	Asp	Val	Phe	Arg	Leu	Leu	Ser	Gly	Ser
1				5					10				15		
Leu	Val	Lys	Ile	Ser	Val	Glu	Trp	Leu	Asn	Leu	Ser	Tyr	Arg	Arg	Gly
		20					25				30				
Gln	Gly	Gly	His	Arg	Val	Phe	Leu	Ser	Phe	Arg	Tyr	Ala	Tyr	Ile	Ile
		35					40				45				
Val	Pro	Ile	Ser	Val	Val	Phe	Val	Leu	Trp	Gly	Gly	Met	Lys	Gly	Gly
	50					55				60					
Asn	Lys	Ile	Glu	Leu	Pro	Ala	Phe	Gln	Pro	Asp	Ile	Pro	Ala	Glu	Cys
65					70				75					80	
Arg	Glu	Ala	Val	Leu	Met	Ser	Leu	Cys	Ile	Leu	Met	Leu	Ser	His	Asp
			85						90				95		
Leu	Arg	Lys	Asn	Arg	His	Glu	Tyr	Arg	Ser	Arg	Leu	Phe	Arg	Leu	His
			100					105					110		

<210> 8910

<211> 64

<212> PRT

<213> B.fragilis

<400> 8910

Gly	Arg	Gly	Phe	Leu	Ile	Ile	Leu	Thr	Gly	Leu	Ile	Tyr	Phe	Leu	Thr
1				5					10				15		
Leu	Thr	Gly	Tyr	Tyr	Phe	Asn	Asn	Lys	Phe	Gln	Asp	Val	Gly	Thr	Met
		20						25				30			
Lys	Arg	Leu	Phe	Tyr	Ile	Leu	Gln	Pro	His	Leu	Phe	Ile	Phe	Trp	Arg
		35					40				45				
Ile	Phe	Ile	Lys	Gln	Lys	Phe	Gln	Cys	Leu	Ser	Leu	Leu	Ser	Phe	Phe
	50					55					60				

<210> 8911

<211> 62

<212> PRT

<213> B.fragilis

<400> 8911

Ala	Lys	Arg	Val	Leu	His	Asn	Lys	Thr	Thr	Met	Ser	Arg	Ile	Phe	Phe
1				5					10				15		
Ile	Lys	Ile	Val	Leu	Gly	Gly	Ser	Phe	Cys	Cys	Ser	Lys	Asp	Thr	Phe
		20					25					30			
Tyr	Phe	Asn	Ile	Lys	Asn	Asn	Tyr	Leu	Glu	Ile	Phe	Tyr	Ile	Ile	Ile
		35					40				45				
Asp	Asn	Leu	Gln	Ile	Gly	Cys	Tyr	Arg	Val	Lys	Leu	Phe	Ser		
	50					55					60				

<210> 8912

<211> 168

<212> PRT

<213> B.fragilis

<400> 8912

Ser	Val	Leu	Leu	Ile	Ile	Val	Leu	Tyr	Ala	Val	Gly	Met	Thr	Ala	Gln
1				5					10				15		
Ala	Gln	Lys	Phe	Ala	Leu	Ile	Asp	Met	Glu	Tyr	Ile	Val	Lys	Asn	Ile
		20					25					30			
Pro	Ala	Tyr	Glu	Arg	Ala	Asn	Glu	Gln	Leu	Ser	Gln	Ala	Thr	Lys	Gln
		35					40					45			

Trp Gln Gly Glu Val Glu Val Leu Ala Lys Glu Ala Arg Thr Met Phe
 50 55 60
 Lys Asp Tyr Leu Ala Ala Tyr Ala Lys Leu Thr Ala Ala Gln Lys Thr
 65 70 75 80
 Gln Ile Glu Asp Ala Val Val Glu Lys Glu Arg Val Ala Ser Gln Leu
 85 90 95
 Glu Arg Glu Cys Phe Gly His Glu Gly Glu Leu Phe Lys Lys Arg Glu
 100 105 110
 Glu Leu Met Lys Pro Ile Leu Asp Glu Ile Tyr Asn Ala Val Lys Ala
 115 120 125
 Val Ala Glu Glu Asn Gly Tyr Ala Val Val Val Asp Arg Ala Ser Ala
 130 135 140
 Ser Ser Ile Ile Phe Ala Thr Pro Arg Ile Asp Val Ser Asn Glu Val
 145 150 155 160
 Leu Ala Lys Leu Gly Tyr Ser Asn
 165

<210> 8913

<211> 447

<212> PRT

<213> B.fragilis

<400> 8913

Leu Phe Ile Phe Val Thr Gln Phe Leu Leu Leu Pro Gly Asp Arg
 1 5 10 15
 Lys Tyr Arg Pro Glu Ala His Leu Phe Gly Gln Gln Ile Leu Asn Val
 20 25 30
 Phe Pro Ser Tyr Met Ile Val Leu Ser Phe Ala Gln Ile Thr Asp Leu
 35 40 45
 Phe Arg Glu Tyr Phe Gly Arg Cys Phe Leu Val Leu Lys Cys Phe Glu
 50 55 60
 Ile Gln Gly Ile Leu Ser Ser Ser Gln Cys Asp Thr Ser Cys Phe Met
 65 70 75 80
 Val Gly Ser Tyr His Asn Gln Ser Phe Phe Arg Val Phe Leu Val Lys
 85 90 95
 Leu Ile Ser Asn Phe Asp Gly Ile Ile His Ile Arg His Phe Val Glu
 100 105 110
 His Arg Ser Gly Ile Ile Pro Val Thr Ser Pro Val Tyr Leu Thr Pro
 115 120 125
 Phe Tyr His Gln Lys Glu Thr Phe Val Phe Ala Phe Ser Gln Lys Val
 130 135 140
 Asn Ser Ala Phe Cys Asn Leu Cys Gln Ser Gln Val Ser Phe Phe Thr
 145 150 155 160
 Ile Asp Ser Ile Arg Gln Arg Ala Arg Ile Gly Thr Phe Phe Leu Asn
 165 170 175
 Gln Tyr His Leu Thr Cys Arg Ser Ser Phe Gly Phe Ile Ile Val Ile
 180 185 190
 Pro Thr Ser Asn Gly Val Thr Gly Phe Phe Lys His Arg Glu Asn Ala
 195 200 205
 Arg Ser Phe Phe Leu Ile Ile Ser Ser Gly Trp Phe Gln Glu Thr Gly
 210 215 220
 Thr Gly Ile Lys Ile Lys Thr Cys Phe Arg Lys Ile Gly Ser Tyr Phe
 225 230 235 240
 Ile Ile His Ile Pro Ile Arg Leu Met Cys Val Glu Ser Ser Arg Ser
 245 250 255
 Ser Met Ile Asp Thr Asp Thr Gly Ser Asn Ser His Pro Phe Thr Gly
 260 265 270
 Phe Leu Cys Phe Leu Ser Asn Cys Leu Gln Arg Ile Leu Leu Ile Ile
 275 280 285

His Pro Asn Gly Thr Ile Ile Ser Leu Phe Ala Gly Gly Lys Ser Ser
 290 295 300
 Ser Arg Ser Arg Arg Ile Ser His Gly Ile Ser Gly Arg Glu Ser Ser
 305 310 315 320
 Ser His Cys Pro His Arg Glu Leu Cys Lys Lys Gln Arg Leu Tyr Thr
 325 330 335
 Asn Ala Ala Leu Leu Asp Phe Gly Thr Ile His Phe Arg Thr Ile His
 340 345 350
 Leu Ile Asp Thr His Ser Ile Thr Asn Glu Ile Glu Asn Ile Phe Cys
 355 360 365
 Leu Ser Ile Gly Tyr Asn Cys His Thr Asp Lys Lys Lys Glu Ile Lys
 370 375 380
 Lys Ser Phe His Ser Cys Thr Ile Leu Ser Leu Phe Glu Leu Val Ile
 385 390 395 400
 Ala Lys Ile Lys Ile Leu Lys Arg Arg Lys Gly Glu Arg Asp Met Asn
 405 410 415
 Ile Leu Leu Asn Arg Ser Pro Ser Ile Asn Tyr Pro Ser Thr Gln Thr
 420 425 430
 Ala Ile Ser Asn Leu Pro His Ile Lys Lys Pro Glu Asn Arg Glu
 435 440 445

<210> 8914

<211> 404

<212> PRT

<213> B.fragilis

<400> 8914

Lys Val Ser Leu Leu Gln Gln Lys Leu Pro Pro Asn Thr Ile Phe Met
 1 5 10 15
 Lys Lys Ile Leu Leu Ile Val Val Leu Leu Cys Ser Thr Leu Phe Ala
 20 25 30
 Gln Ala Gln Lys Ser Asp Val Ile Ile Gly Ala Glu Gln Thr Lys Ala
 35 40 45
 Tyr Phe Pro Ile Leu Lys Asn Lys Arg Ile Ala Ile Phe Ser Asn His
 50 55 60
 Thr Gly Met Val Gly Asn Lys His Leu Leu Asp Ile Leu Leu Glu Asn
 65 70 75 80
 Asn Phe Asn Val Val Ala Ile Phe Ser Pro Glu His Gly Phe Arg Gly
 85 90 95
 Asn Ala Asp Ala Gly Glu His Val Ser Ser Thr Ile Asp Ser Lys Thr
 100 105 110
 Gly Val Pro Ile Leu Ser Leu Tyr Asn Gly Lys Ser Lys Lys Pro Ser
 115 120 125
 Glu Ala Ser Met Lys Lys Phe Asp Ile Leu Ile Val Asp Ile Gln Asp
 130 135 140
 Val Gly Leu Arg Phe Tyr Thr Tyr Tyr Ile Ser Met Val Arg Leu Met
 145 150 155 160
 Asp Ala Cys Ala Glu Tyr Asp Arg Lys Ile Leu Ile Leu Asp Arg Pro
 165 170 175
 Asn Pro Asn Gly His Tyr Val Asp Gly Pro Ile Leu Asp Met Lys Tyr
 180 185 190
 Lys Ser Gly Val Gly Gly Leu Pro Ile Pro Ile Val His Gly Met Thr
 195 200 205
 Leu Gly Glu Leu Ala Leu Met Val Asn Gly Glu Arg Trp Leu Pro Ser
 210 215 220
 Ser Arg Ile Cys Asp Val Thr Val Ile Pro Cys Lys Asn Tyr Thr His
 225 230 235 240
 Gln Thr Met Tyr Arg Leu Pro Ile Pro Pro Ser Pro Asn Leu Pro Asn
 245 250 255

Met Lys Ala Ile Tyr Leu Tyr Pro Ser Ile Cys Leu Phe Glu Gly Thr
 260 265 270
 Pro Val Ser Leu Gly Arg Gly Thr Thr Leu Pro Phe Gln Val Tyr Gly
 275 280 285
 His Pro Asn Met Thr Gly Tyr Asn Tyr Asn Phe Thr Pro Arg Ser Ile
 290 295 300
 Pro Gly Ala Lys Asn Pro Pro Gln Leu Asn Lys Leu Cys His Gly Val
 305 310 315 320
 Asn Leu Ser Asn Leu Ser Asp Glu Glu Ile Trp Lys Lys Gly Ile Asn
 325 330 335
 Leu Asp Tyr Leu Ile Asp Ala Tyr His Asn Leu Asn Met Gly Asp Arg
 340 345 350
 Phe Phe Arg Pro Phe Phe Glu Leu Leu Val Gly Thr Asp Tyr Val Arg
 355 360 365
 Lys Met Ile Glu Gly Gly Lys Ser Ala Asp Glu Ile Lys Ala Arg Trp
 370 375 380
 Lys Arg Asp Val Glu Arg Phe Lys Ile Gln Arg Lys Pro Tyr Leu Leu
 385 390 395 400
 Tyr Gln Asp Asn

<210> 8915
 <211> 494
 <212> PRT
 <213> B.fragilis

<400> 8915
 Asn Ile Ser Phe Ile Asn Leu Lys Ser Met Thr Pro Val Ala Val Leu
 1 5 10 15
 Ile Thr Ile Ala Ser Tyr Phe Leu Ile Leu Phe Thr Ile Ser Tyr Ile
 20 25 30
 Ala Gly Arg Lys Ala Asp Asn Glu Gly Phe Phe Val Gly Asn Arg Lys
 35 40 45
 Ser Ala Trp Tyr Val Val Ala Phe Ala Met Ile Gly Ser Ser Ile Ser
 50 55 60
 Gly Val Thr Phe Val Ser Val Pro Gly Met Val Gly Ile Ser Asn Phe
 65 70 75 80
 Ser Tyr Leu Gln Met Val Leu Gly Phe Val Thr Gly Gln Ile Ile Ile
 85 90 95
 Ala Phe Val Leu Ile Pro Leu Phe Tyr Arg Met Asn Leu Val Ser Ile
 100 105 110
 Tyr Glu Tyr Leu Glu Asn Arg Phe Gly Thr Ser Ser Tyr Lys Thr Gly
 115 120 125
 Ala Trp Phe Phe Phe Ile Ser Lys Ile Leu Gly Ala Ala Val Arg Leu
 130 135 140
 Tyr Leu Val Cys Leu Thr Leu Gln Leu Leu Val Phe Glu Pro Phe His
 145 150 155 160
 Met Pro Phe Ile Met Asn Val Ile Leu Thr Val Ala Leu Val Trp Leu
 165 170 175
 Tyr Thr Phe Arg Gly Gly Val Lys Ser Leu Ile Trp Thr Asp Ser Leu
 180 185 190
 Lys Thr Phe Cys Leu Ile Val Ser Val Val Leu Cys Ile Tyr Tyr Ile
 195 200 205
 Ser Thr Asp Leu Lys Leu Ser Phe Thr Glu Met Phe Ser Thr Val Ser
 210 215 220
 Asp Ser Ala Leu Ser His Met Phe Phe Phe Asp Asn Val Asn Asp Lys
 225 230 235 240
 Arg Tyr Phe Phe Lys Gln Phe Leu Ala Gly Val Phe Thr Met Ile Ala
 245 250 255

Met Thr Gly Leu Asp Gln Asp Met Met Gln Arg Asn Leu Ser Cys Lys
 260 265 270
 Asn Phe Lys Asp Ser Gln Lys Asn Met Ile Thr Ser Gly Ile Ser Gln
 275 280 285
 Phe Phe Ile Ile Leu Leu Phe Leu Met Leu Gly Val Leu Leu Tyr Thr
 290 295 300
 Phe Thr Ser His Gln Gly Ile Thr Asn Pro Ala Lys Ser Asp Glu Leu
 305 310 315 320
 Phe Pro Met Ile Ala Thr Gly Gly Tyr Phe Pro Ile Ile Val Gly Ile
 325 330 335
 Leu Phe Ile Ile Gly Leu Ile Ser Ser Ala Tyr Ser Ala Ala Gly Ser
 340 345 350
 Ala Leu Thr Ala Leu Thr Thr Ser Phe Thr Val Asp Ile Leu Gly Ile
 355 360 365
 Lys Gly Lys Thr Glu Asp Thr Val Arg Lys Thr Arg Lys Lys Val His
 370 375 380
 Val Gly Met Ala Ile Val Met Gly Ile Val Ile Phe Ile Phe Asn Leu
 385 390 395 400
 Leu Asn Asn Thr Ser Val Ile Asp Ala Val Tyr Ile Leu Ala Ser Tyr
 405 410 415
 Thr Tyr Gly Pro Ile Leu Gly Leu Phe Ala Phe Gly Ile Leu Thr Lys
 420 425 430
 Arg Gln Val Arg Asp Arg Tyr Ile Pro Leu Val Ser Ile Leu Ser Pro
 435 440 445
 Ile Leu Cys Phe Ile Leu Gln Lys Asn Ser Glu Thr Trp Phe His Gly
 450 455 460
 Tyr Gln Phe Ser Tyr Glu Leu Leu Ile Phe Asn Ala Leu Phe Thr Phe
 465 470 475 480
 Ile Gly Leu Cys Phe Leu Ile Lys Lys Thr Ile Asn Leu Thr
 485 490

<210> 8916
 <211> 188
 <212> PRT
 <213> B.fragilis

<400> 8916
 Phe His Thr Phe Ala Pro Asp Asn Leu Lys Val Ile Ile Gln Ile Asn
 1 5 10 15
 Asn Lys Thr Met Leu Lys Lys Ile Ala Leu Leu Met Met Leu Ile Leu
 20 25 30
 Pro Met Gly Val Phe Ala Gln Asn Leu Lys Phe Gly His Ile Asn Ala
 35 40 45
 Met Glu Ile Val Ser Ala Met Pro Glu Tyr Thr Lys Ala Gln Ser Glu
 50 55 60
 Leu Gln Ala Leu Asn Lys Gln Leu Gly Gln Asp Leu Gln Arg Ser Gln
 65 70 75 80
 Glu Glu Phe Ser Lys Lys Tyr Gln Glu Phe Met Gln Gln Lys Asp Ser
 85 90 95
 Leu Pro Ala Val Ile Ala Glu Arg Arg Gln Lys Glu Leu Glu Asp Met
 100 105 110
 Met Gln Arg Gln Glu Gln Phe Gln Ala Lys Ala Gln Gln Asp Met Glu
 115 120 125
 Lys Ala Asn Asn Asp Leu Met Ala Pro Val Tyr Lys Lys Leu Asp Asp
 130 135 140
 Ala Ile Lys Ala Val Gly Ala Ala Glu Gly Val Ile Tyr Ile Phe Asp
 145 150 155 160
 Met Ala Arg Thr Pro Ile Pro Tyr Val Asn Glu Ala Gln Ser Ile Asn
 165 170 175

Leu Thr Pro Lys Val Lys Thr Gln Leu Gly Ile Lys
 180 185

<210> 8917
 <211> 521
 <212> PRT
 <213> B.fragilis

<400> 8917

Met Ile Lys Phe Val Asn Lys Thr Met Ala Pro Glu Asp Val Phe Lys
 1 5 10 15
 Lys Val Val Ser His Cys Lys Glu Tyr Gly Phe Val Phe Pro Ser Ser
 20 25 30
 Asp Ile Tyr Asp Gly Leu Gly Ala Val Tyr Asp Tyr Gly Gln Met Gly
 35 40 45
 Val Glu Leu Lys Asn Asn Ile Lys Lys Tyr Trp Trp Asp Ser Met Val
 50 55 60
 Leu Leu His Glu Asn Ile Val Gly Ile Asp Ser Ala Ile Phe Met His
 65 70 75 80
 Pro Thr Ile Trp Lys Ala Ser Gly His Val Asp Ala Phe Asn Asp Pro
 85 90 95
 Leu Ile Asp Asn Lys Asp Ser Lys Lys Arg Tyr Arg Ala Asp Val Leu
 100 105 110
 Ile Glu Asp Gln Leu Ala Lys Tyr Asp Asp Lys Ile Asn Lys Glu Val
 115 120 125
 Ala Lys Ala Ala Lys Arg Phe Gly Glu Ala Phe Asp Glu Ala Gln Phe
 130 135 140
 Arg Ser Thr Asn Gly Arg Val Leu Glu His Gln Ala Lys Arg Asp Ala
 145 150 155 160
 Leu His Glu Arg Phe Ala Lys Ala Leu Asn Asp Asn Asn Leu Glu Glu
 165 170 175
 Leu Arg Gln Ile Ile Val Asp Glu Glu Ile Ala Cys Pro Ile Ser Gly
 180 185 190
 Thr Lys Asn Trp Thr Glu Val Arg Gln Phe Asn Leu Met Phe Ser Thr
 195 200 205
 Asp Met Gly Ser Thr Ala Asp Gly Ser Met Lys Ile Tyr Leu Arg Pro
 210 215 220
 Glu Thr Ala Gln Gly Ile Phe Val Asn Tyr Leu Asn Val Gln Thr Thr
 225 230 235 240
 Gly Arg Met Lys Val Pro Phe Gly Ile Ala Gln Ile Gly Lys Ala Phe
 245 250 255
 Arg Asn Glu Ile Val Ala Arg Gln Phe Ile Phe Arg Met Arg Glu Phe
 260 265 270
 Glu Gln Met Glu Met Gln Phe Phe Val Arg Pro Gly Ser Glu Leu Glu
 275 280 285
 Tyr Phe Lys Lys Trp Lys Glu Ile Arg Leu Lys Trp His Lys Ala Leu
 290 295 300
 Gly Phe Gly Asp Asp His Tyr Arg Phe His Asp His Asp Lys Leu Ala
 305 310 315 320
 His Tyr Ala Asn Ala Ala Thr Asp Ile Glu Phe Leu Met Pro Phe Gly
 325 330 335
 Phe Lys Glu Val Glu Gly Ile His Ser Arg Thr Asn Phe Asp Leu Ser
 340 345 350
 Gln His Glu Lys Phe Ser Gly Lys Ser Ile Lys Tyr Phe Asp Pro Glu
 355 360 365
 Leu Asn Glu Ser Tyr Thr Pro Tyr Val Ile Glu Thr Ser Ile Gly Val
 370 375 380
 Asp Arg Met Phe Leu Ser Ile Met Ser Ala Ala Tyr Cys Glu Glu Gln
 385 390 395 400

Leu Glu Asn Gly Glu Ser Arg Val Val Leu Lys Leu Pro Ala Ala Leu
 405 410 415
 Ala Pro Val Lys Leu Ala Val Met Pro Leu Val Lys Lys Asp Gly Leu
 420 425 430
 Pro Glu Lys Ala Arg Glu Ile Ile Asp Asn Leu Lys Phe His Phe His
 435 440 445
 Cys Gln Tyr Asp Glu Lys Asp Ser Ile Gly Lys Arg Tyr Arg Arg Gln
 450 455 460
 Asp Ala Ile Gly Thr Pro Tyr Cys Val Thr Val Asp His Gln Thr Leu
 465 470 475 480
 Glu Asp Asn Cys Val Thr Leu Arg Asn Arg Asp Thr Met Glu Gln Glu
 485 490 495
 Arg Val Ala Ile Ser Glu Leu Asn Asn Ile Ile Ala Asp Arg Val Ser
 500 505 510
 Ile Thr Ser Leu Leu Lys Thr Ile Gln
 515 520

<210> 8918
 <211> 357
 <212> PRT
 <213> B.fragilis

<400> 8918

Thr Met Lys Phe Ile Tyr Ser Ile Leu Phe Ala Leu Leu Trp Ile Gly
 1 5 10 15
 Val Thr Ile Thr Phe Gly Ser Tyr Leu Tyr Arg Met Gly Leu Pro Ile
 20 25 30
 Val Asn Ala Ser Ala Gln Lys Leu Leu Leu Arg Thr Ile Asp Glu Asp
 35 40 45
 Leu Glu Cys Arg Phe Arg Lys Leu Lys Pro Asn Gln Ala Tyr Val Thr
 50 55 60
 Gly Lys Lys His Thr Lys Asn Lys Lys Val Thr Leu Thr Asp Lys Ser
 65 70 75 80
 Gly Thr His Asn Val Arg Gln Phe Ala Ile Asp Thr Val Tyr Thr Asp
 85 90 95
 Thr Ser Phe Val His Arg Val Lys Gln Ser Tyr Leu Ile Glu Arg Asn
 100 105 110
 Ser Ile Asn Val Asp Ser Leu Asn Gln Lys Trp Gln Leu Lys Leu Arg
 115 120 125
 Met Asp Gly Ile Cys Ala Asn Thr Gly Ile Lys Leu Thr Asn Ser Leu
 130 135 140
 Lys Asn Gly Glu Arg Ile Ser Ala Ser Ser Gly Leu Asn Glu Pro Asp
 145 150 155 160
 Cys Phe Leu Leu Ala Tyr Ser Thr Gly Val Gly Tyr Gly Ile Lys Met
 165 170 175
 Asp Ala Phe Ile Arg Pro Phe Trp Ala Thr Val Val Leu Lys Ala His
 180 185 190
 Trp Asn Asn Ile Trp Thr Trp Asn Tyr Val Leu Phe Ser Leu Ile Phe
 195 200 205
 Cys Leu Phe Tyr Val Pro Gly Val Arg Leu Phe Leu Val Gln Val Leu
 210 215 220
 Ser Lys Phe Arg Ile Val Asp Asn His Val Lys Ser Ser Gln Pro Leu
 225 230 235 240
 Val Gln Gln Lys Ser Glu Phe Val Trp Glu Val Asn Gly Leu Thr Phe
 245 250 255
 Asp Tyr Leu Gln Arg Ser Ile Thr Tyr His Asn Gln Thr Cys Ile Leu
 260 265 270
 Arg Lys Gln Val Val Glu Val Leu Leu Ala Phe Leu Lys Val Pro Gly
 275 280 285

His Leu Leu Leu Asn Glu Asp Leu Lys Lys Leu Phe Trp Lys Glu Leu
 290 295 300
 Glu Asp Val Asp Ser Cys Met Glu Arg Arg Asn Arg Leu Ile Thr Asp
 305 310 315 320
 Leu Arg Thr Asp Leu Arg Lys Ile Gly Ala Asn Leu Gly Val Thr Leu
 325 330 335
 Val Asn Gly Gly Tyr Gln Leu His Phe Arg Ser Glu Asn Ser Lys Lys
 340 345 350
 Ser Val Lys Asn Gln
 355

<210> 8919
 <211> 196
 <212> PRT
 <213> B.fragilis

<400> 8919
 Leu Leu Ser Ser Pro Arg Glu Ala Ser Ala Glu Ala Lys Arg Lys Trp
 1 5 10 15
 Ile Asn Ser Ile Arg Glu Val Ser Thr Trp Val Ser Arg Arg Glu Val
 20 25 30
 Tyr Gln Ala Leu Gly Arg Phe Ser Asn Met Arg Phe Gly Glu His Ile
 35 40 45
 Asp Phe Ser Ile Arg Ile Ser Lys Gly Gly Tyr Gln Cys Arg Leu Phe
 50 55 60
 Pro Asp Ala Trp Val Tyr His Lys Arg Arg Thr Asp Phe Lys Lys Phe
 65 70 75 80
 Phe Lys Gln Val His Asn Ser Gly Ile Ala Arg Ile Asn Leu Tyr Lys
 85 90 95
 Lys Tyr Pro Glu Ser Leu Lys Val Val His Leu Leu Pro Val Val Phe
 100 105 110
 Thr Ser Gly Val Ala Leu Leu Leu Leu Cys Thr Pro Phe Cys Leu Phe
 115 120 125
 Asn Leu Val Pro Ile Leu Leu Tyr Ala Leu Leu Val Cys Leu Asp Ser
 130 135 140
 Ala Leu Gln Asn Lys Ser Leu Arg Ile Gly Ile Tyr Ser Ile Ala Ala
 145 150 155 160
 Ser Phe Ile Gln Leu Ile Gly Tyr Gly Thr Gly Phe Trp Arg Ala Trp
 165 170 175
 Trp Glu Arg Cys Ile Leu Gly Arg Asn Glu Phe Glu Ala Phe Arg Lys
 180 185 190
 Asn Phe Tyr Lys
 195

<210> 8920
 <211> 260
 <212> PRT
 <213> B.fragilis

<400> 8920
 Thr Ile His Ser Tyr Ser Met Lys Asn Val Tyr Phe Leu Ser Asp Ala
 1 5 10 15
 His Leu Gly Ser Arg Ala Ile Glu His Gly Arg Thr Gln Glu Arg Arg
 20 25 30
 Leu Val Asn Phe Leu Asp Ser Ile Lys His Lys Ala Ala Val Tyr
 35 40 45
 Leu Leu Gly Asp Met Phe Asp Phe Trp Tyr Glu Phe Arg Leu Val Val
 50 55 60
 Pro Lys Gly Tyr Thr Arg Phe Leu Gly Lys Leu Ser Glu Leu Thr Asp

65		70		75		80
Met Gly Val Glu Val His Phe Phe Thr Gly Asn His Asp Ile Trp Cys						
	85		90			95
Gly Asp Tyr Leu Thr Lys Glu Cys Gly Val Thr Ile His Arg Glu Pro						
	100		105			110
Val Thr Thr Glu Ile Tyr Gly Lys Glu Phe Tyr Leu Ala His Gly Asp						
	115		120			125
Gly Leu Gly Asp Pro Asp Lys Lys Phe Lys Leu Leu Arg Thr Met Phe						
	130		135			140
His Ser Arg Thr Leu Gln Thr Leu Phe Ser Ala Ile His Pro Arg Trp						
	145		150			155
Ser Ile Asp Leu Gly Leu Asn Trp Ala Lys His Ser Arg Leu Lys Arg						
	165		170			175
Glu Gly Gly Lys Glu Pro Asp Tyr Met Gly Glu Asn Lys Glu Phe Leu						
	180		185			190
Val Leu Tyr Thr Lys Glu Tyr Leu Lys Ser His Pro Asn Ile Asn Phe						
	195		200			205
Phe Ile Tyr Gly His Arg His Ile Glu Leu Asp Leu Met Leu Ser Ala						
	210		215			220
Thr Ala Arg Ile Leu Ile Leu Gly Asp Trp Ile Asn Phe Phe Ser Tyr						
	225		230			235
Ala Val Phe Asp Gly Glu Asn Leu Phe Leu Glu Asn Tyr Ile Glu Gly						
	245		250			255
Glu Thr Gln Leu						
	260					

<210> 8921
 <211> 123
 <212> PRT
 <213> B.fragilis

<400> 8921

Ala Met His Ser Cys Leu Ile Cys Ile Gly Ser Asn Tyr Asn Arg Lys														
1		5		10										15
Glu Asn Leu Leu Leu Ala Arg Arg Arg Leu Thr Ala Leu Phe Pro Ser														
	20			25										30
Ile Arg Phe Thr Gly Glu Gln Glu Thr Arg Pro Leu Phe Phe Arg Asn														
	35			40										45
Pro Ala Leu Phe Ser Asn Gln Met Ala Arg Phe Tyr Thr Asp Ala Asp														
	50			55										60
Ala Glu Arg Val Val Lys Glu Leu Lys Thr Ile Glu Arg Glu Ala Gly														
	65			70										80
Arg Glu Gln Glu Asp Lys Lys Lys Glu Lys Val Cys Leu Asp Ile Asp														
		85						90						95
Leu Leu Val Phe Asp Asp Arg Ile Leu Arg Pro Glu Asp Leu Gln Arg														
	100							105						110
Glu Tyr Val Arg Lys Gly Leu Glu Glu Leu Lys														
	115							120						

<210> 8922
 <211> 336
 <212> PRT
 <213> B.fragilis

<400> 8922

Gly Phe Ser Ser Gly Leu Val Ala Arg Leu Tyr Ala Cys Leu Leu Arg														
1		5		10										15
Thr Thr Gln Leu Ile Cys Pro Met Lys Arg Pro Thr Ile Pro Leu Met														
	20							25						30

Leu Leu Ile Ala Ala Ser Ile Phe Val Phe Phe Leu Leu Asn Leu Leu
 35 40 45
 Leu Gly Ser Val Ser Ile Pro Ile Gly Ser Val Trp Asn Ile Leu Trp
 50 55 60
 Gly Gly Thr Asp Glu Ser Val Ile Trp Gln Asn Ile Ile Trp Lys Ser
 65 70 75 80
 Arg Val Pro Gln Ala Leu Thr Ala Leu Val Ala Gly Ala Gly Leu Ser
 85 90 95
 Ile Ser Gly Leu Gln Met Gln Thr Ile Phe Arg Asn Pro Leu Ala Gly
 100 105 110
 Pro Ser Val Leu Gly Ile Ser Ser Gly Ala Ser Leu Gly Val Ala Phe
 115 120 125
 Val Val Leu Leu Ser Gly Ala Phe Gly Gly Val Ala Leu Ser Lys Leu
 130 135 140
 Gly Tyr Met Gly Glu Val Ala Leu Ser Leu Ala Ala Val Ile Gly Ala
 145 150 155 160
 Leu Ser Val Met Ala Leu Ile Val Tyr Val Ser Gln Lys Val Lys Gly
 165 170 175
 Asn Val Thr Leu Leu Ile Ile Gly Val Met Ile Gly Tyr Val Ala Ser
 180 185 190
 Ala Val Ile Gly Val Leu Lys Tyr Phe Ser Val Glu Glu Asp Ile Arg
 195 200 205
 Ala Tyr Val Ile Trp Gly Leu Gly Ser Phe Ala Arg Val Ser Gly Asp
 210 215 220
 Gln Met Thr Leu Phe Val Cys Ile Met Val Val Leu Ile Pro Leu Ser
 225 230 235 240
 Phe Leu Leu Ile Lys Thr Met Asn Leu Met Leu Leu Gly Asp Gly Tyr
 245 250 255
 Ala Arg Asn Leu Gly Leu Asn Ile Arg Arg Ala Arg Leu Val Gly His
 260 265 270
 Phe Met Phe Gly Ser Ala Cys Ser His Arg Asp Arg Leu Leu Arg Thr
 275 280 285
 Asp Tyr Val His Trp Phe Gly Gly Ser Ser Ser Leu Pro Cys His Leu
 290 295 300
 Ser Tyr Leu Gly Ser Pro His Pro Asp Ala Gly His Phe Ala Gly Arg
 305 310 315 320
 Cys Phe Val Gly Phe Gly Met Gln Ser Gly Cys Pro His Ala Gly Leu
 325 330 335

<210> 8923
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 8923
 Leu Ala Thr Pro Ser Ala Val Arg Thr Thr Lys Asn Val Leu Ser Ala
 1 5 10 15
 Gly Phe Gly Leu Thr Met Ile Ser Lys Ser Ala Ala Thr Val Gly Gly
 20 25 30
 Phe Phe Leu Ala Asp Met Met Leu Val Gly Val Asn Thr Pro Leu Thr
 35 40 45
 Leu Ile Lys Val Ala Ala Ser Thr Leu Asp Val Pro Glu Ile Tyr Trp
 50 55 60
 Asn Ala Phe Ser Val Ala
 65 70

<210> 8924
 <211> 350
 <212> PRT

<213> B.fragilis

<400> 8924

Cys Asn Ala Pro Ser Ser Lys Gly Leu Phe Val Ser Ile Gly Ala Thr
 1 5 10 15
 Lys Val Thr Asp Tyr Leu Phe Thr Asp Lys Asn Ile Lys Thr Met Ile
 20 25 30
 Met Arg Asn Ile Asn Thr Asp Leu Ile Asp Ala Met Lys Ile Tyr Leu
 35 40 45
 Pro Lys Gly Asn Asn Leu Ala Asn Ala Leu Met Asp Ile Leu Tyr Leu
 50 55 60
 Gly Lys Glu Ala Thr Tyr Arg Arg Leu Arg Gly Glu Val Pro Phe Thr
 65 70 75 80
 Phe Ala Glu Val Ala Thr Ile Ser Gln His Met Gly Ile Ser Leu Asp
 85 90 95
 Lys Ile Val Gly Ala Asp Leu Asn Asp Asn Ala Ile Val Asn Leu Asn
 100 105 110
 Met Leu Gln Cys Gln Arg Pro Ala Glu Thr Tyr Tyr Ser Ile Ile Asp
 115 120 125
 Ser Tyr Ile Lys Leu Phe Gly Gln Leu Ile Glu Arg Glu Ser Ser Glu
 130 135 140
 Arg Ser Thr Ser Ser Asn Thr Val Pro Gln Thr Leu Tyr Leu Lys Tyr
 145 150 155 160
 Glu Ala Leu Ser Lys Phe Gln Leu Phe Lys Trp Ile Tyr Gln His Glu
 165 170 175
 Ser Thr Tyr Ala Gly Arg His Tyr Glu Asp Leu Glu Ile Pro Glu Lys
 180 185 190
 Leu Ile Asp Lys Gln Lys Glu Phe Val Asn Leu Ser Gln Leu Phe Gln
 195 200 205
 Ser Thr Asn Tyr Ile Trp Asp Lys Glu Ile Phe Ile Arg Leu Val Asn
 210 215 220
 Glu Val Lys Phe Phe Leu Asn Ile Asn Leu Ile Ser Glu Asp Ser Val
 225 230 235 240
 Lys Arg Ile Lys Lys Glu Leu Leu Ile Leu Leu Asn Glu Leu Glu Lys
 245 250 255
 Ile Ser Ala Gln Gly Lys Tyr Ser Ser Gly Lys Asp Val Lys Ile Tyr
 260 265 270
 Ile Ser Asp Ile Asn Phe Glu Ser Thr Tyr Ser Tyr Val Glu Thr Asp
 275 280 285
 Ile Tyr His Gln Cys Leu Ile Gly Val Phe Ser Ile Asn Ser Ile Thr
 290 295 300
 Ser Lys Asp Asp Phe Leu Phe Gln His Leu Lys Leu Trp Ile Gln Ser
 305 310 315 320
 Leu Lys Lys Tyr Ser Thr Leu Ile Ser Gln Ser Gly Glu Val Gln Arg
 325 330 335
 Ile His Phe Phe Asn Arg Gln Gln Glu Leu Val Lys Ser Leu
 340 345 350

<210> 8925

<211> 69

<212> PRT

<213> B.fragilis

<400> 8925

Ala Thr Glu Pro Ser Phe Ile Ala Ser Ala Lys Val Val Leu Phe Leu
 1 5 10 15
 Lys Ser Pro Lys Lys Ser Val Ser Phe Thr Tyr Ile Phe Thr Tyr
 20 25 30
 Ile Phe Tyr Asn Pro Lys Gly Lys Leu Val Lys Tyr Gln Ile Lys Ser

35 40 45
 Asn Ile Val Gln Pro Ile Ser Ile Tyr Thr Glu Tyr Arg Gln Val Tyr
 50 55 60
 Phe Lys Ser Glu Pro
 65

<210> 8926
 <211> 199
 <212> PRT
 <213> B.fragilis

<400> 8926
 Asn Arg Glu Pro Val Val Phe Gln Leu Gln Gly Gln Asp Lys Leu Leu
 1 5 10 15
 Arg Gln Ala Ala Phe Asp Leu Leu Ile Leu Asp Ile Ile Met Pro Lys
 20 25 30
 Met Ile Gly Leu Glu Leu Cys Arg Leu Tyr Arg His Gln Tyr Gly Tyr
 35 40 45
 Leu Thr Pro Val Ile Met Leu Thr Ala Leu Gly Thr Thr Glu Asp Ile
 50 55 60
 Val Lys Gly Leu Asp Ser Gly Ala Asp Asp Tyr Leu Val Lys Pro Phe
 65 70 75 80
 Ser Phe Gln Glu Leu Glu Ala Arg Ile Lys Ala Ile Leu Arg Arg Gly
 85 90 95
 Arg Glu Asp Ser Val Gln Gln Leu Val Cys Asp Asp Leu Val Leu Asn
 100 105 110
 Cys Asn Thr Arg Arg Ala Arg Arg Lys Glu Val Glu Ile Glu Leu Thr
 115 120 125
 Val Lys Glu Tyr Arg Leu Leu Glu Tyr Phe Met Thr His Gln Gly Met
 130 135 140
 Val Leu Ser Arg Leu Thr Leu Leu Lys Asp Val Trp Asp Lys Asn Phe
 145 150 155 160
 Asp Thr Asn Thr Asn Val Val Asp Val Tyr Val Asn Tyr Leu Arg Gly
 165 170 175
 Lys Ile Asp Lys Glu His Asp Lys Lys Leu Ile His Thr Val Val Gly
 180 185 190
 Ser Gly Tyr Ile Met Tyr Ala
 195

<210> 8927
 <211> 90
 <212> PRT
 <213> B.fragilis

<400> 8927
 Arg Asn Lys Phe Leu Ser Glu Val Ile Glu Ile Leu Pro Gly Leu Phe
 1 5 10 15
 Lys Ile Ile Leu Pro Glu Ser Val Pro Gln Gly Leu Ser Leu Phe Leu
 20 25 30
 Lys Glu Ser Thr Ile Gln Pro Ile Asp Pro His Ala Gly Asn Leu Ala
 35 40 45
 Ser Asn Gln Gln Met Cys Leu Asn Ile Gly Arg Lys Glu Cys Phe Cys
 50 55 60
 Ser Arg Ser Leu Ser Ser Glu Arg Phe Ser Ile Thr Cys Asn Phe Tyr
 65 70 75 80
 Arg Leu Ser Leu Tyr Asp Val Pro Leu Cys
 85 90

<210> 8928

<211> 60
 <212> PRT
 <213> B.fragilis

<400> 8928

Thr	Thr	Thr	Thr	Arg	Phe	Glu	Ile	Gly	Asn	Tyr	Leu	Phe	Asp	Ser	Leu
1				5					10					15	
Ala	Gln	Thr	Leu	Thr	His	Ala	Gly	Leu	Lys	His	Glu	Leu	Ser	His	Arg
			20					25					30		
Glu	Ser	Glu	Ile	Leu	Arg	Ala	Thr	Leu	Arg	Lys	Ser	Glu	Ser	Ser	Gly
		35					40					45			
Gln	His	Thr	Glu	Cys	Ile	Thr	Arg	Pro	Met	Gly	Arg				
	50					55					60				

<210> 8929
 <211> 236
 <212> PRT
 <213> B.fragilis

<400> 8929

Gln	Met	Ile	Thr	Thr	His	Pro	Ile	Arg	Phe	Val	Ser	Leu	Gly	Pro	Gly
1				5					10					15	
Glu	Pro	Asp	Leu	Ile	Thr	Leu	Lys	Gly	Leu	Lys	Ala	Leu	Gln	Gly	Ala
			20					25					30		
Asp	Cys	Ile	Phe	Cys	Pro	Ala	Thr	Met	Thr	Gln	Asp	Gly	Lys	Ser	Ser
		35					40					45			
Ser	Arg	Ala	Leu	Ser	Ile	Leu	Asn	Thr	Leu	Gly	Phe	Ser	Asp	Thr	Val
		50				55					60				
Gln	Cys	Phe	Arg	Leu	Pro	Met	Asp	Lys	Asp	Arg	Thr	Leu	Ala	Leu	Arg
65					70				75					80	
Ser	Tyr	Glu	Ala	Val	Tyr	Glu	Ser	Ser	Lys	Ile	Leu	Arg	Ala	Glu	Gly
				85					90					95	
Gln	Asn	Val	Val	Ile	Val	Ala	Glu	Gly	Asp	Ala	Gly	Leu	Tyr	Ser	Ser
			100					105					110		
Ile	His	Tyr	Ile	Tyr	Asp	Lys	Leu	Gln	Gln	Asp	Asp	Ile	Pro	Val	Glu
		115					120					125			
Gln	Ile	Ala	Gly	Ile	Pro	Ala	Phe	Ile	Ala	Ser	Gly	Ala	Met	Ala	Gly
	130					135					140				
Leu	His	Ile	Val	Ser	Gln	Glu	Glu	Arg	Leu	Ile	Val	Ile	Pro	Gly	His
145					150				155					160	
Val	Thr	Ala	Lys	Glu	Leu	Asp	Asp	Tyr	Leu	Lys	His	Gln	Thr	Val	Val
				165					170					175	
Val	Ile	Met	Lys	Leu	Ser	Gln	Cys	Ile	Asp	Glu	Val	His	Gln	Cys	Ile
			180					185					190		
Ile	Asn	His	Pro	Glu	Tyr	Gln	Tyr	His	Tyr	Phe	Glu	Asn	Val	Gly	Thr
		195					200					205			
Glu	Lys	Glu	Tyr	Tyr	Ser	Cys	Ser	Thr	Glu	Glu	Leu	Arg	Glu	Lys	Arg
	210					215					220				
Tyr	Pro	Tyr	Phe	Ser	Val	Met	Ile	Ile	Arg	Phe	Gly				
225					230						235				

<210> 8930
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 8930

Arg	Gly	Val	Thr	Leu	Ser	Glu	Ser	Asp	Asn	His	Tyr	Arg	Glu	Ile	Arg
1				5					10					15	

Ile	Ser	Phe	Phe	Pro	Lys	Phe	Phe	Gly	Gly	Ala	Arg	Val	Val	Phe	Leu
		20						25					30		
Leu	Gly	Pro	Tyr	Ile	Phe	Lys	Val	Val	Val	Leu	Val	Phe	Arg	Met	Val
		35					40					45			
Asn	Tyr	Thr	Leu	Val	Tyr	Leu	Val	Tyr	Thr	Leu	Arg				
	50					55					60				

<210> 8931

<211> 492

<212> PRT

<213> B.fragilis

<400> 8931

Leu	Ile	Trp	Thr	Ile	Trp	Lys	Gln	Met	Lys	Ser	Lys	Trp	Arg	Met	Pro
1				5					10					15	
His	Pro	Ala	Thr	Met	Phe	Phe	Leu	Phe	Thr	Leu	Ala	Val	Ile	Phe	Leu
			20					25					30		
Ser	Trp	Ile	Phe	Asp	Ile	Tyr	Gly	Leu	Arg	Val	Gln	Leu	Pro	Gln	Thr
		35					40					45			
Gly	Ala	Glu	Ile	Arg	Val	Gln	Ser	Leu	Leu	Ser	Pro	Glu	Gly	Ile	Arg
	50					55				60					
Trp	Met	Leu	Arg	Asn	Ala	Ile	Thr	Asn	Phe	Thr	Gly	Phe	Ala	Pro	Leu
65					70					75					80
Gly	Met	Val	Leu	Ile	Ala	Met	Phe	Gly	Ile	Gly	Val	Ala	Gln	His	Ser
				85					90					95	
Gly	Phe	Ile	Asp	Ala	Cys	Val	Arg	Gln	Gly	Val	Lys	Asn	Arg	Lys	Asn
			100					105					110		
Thr	Arg	Arg	Ile	Ile	Leu	Trp	Val	Ile	Ile	Leu	Gly	Leu	Leu	Ser	Asn
			115					120					125		
Ile	Val	Gly	Asp	Ala	Gly	Tyr	Ile	Ile	Leu	Leu	Pro	Ile	Ala	Ala	Thr
	130					135					140				
Leu	Phe	Tyr	Ser	Val	Gly	Leu	Asn	Pro	Val	Ala	Gly	Ile	Ile	Thr	Ala
145					150					155					160
Tyr	Val	Ser	Val	Ser	Cys	Gly	Tyr	Ser	Ala	Asn	Val	Val	Leu	Ser	Thr
				165					170					175	
Met	Asp	Pro	Leu	Ile	Ala	Arg	Thr	Thr	Gln	Glu	Ala	Ala	Ile	Asp	Ser
			180					185					190		
Gly	Val	Tyr	Gln	Gly	Asn	Thr	Gly	Pro	Leu	Cys	Asn	Tyr	Tyr	Phe	Met
		195					200					205			
Ser	Val	Ser	Thr	Phe	Val	Ile	Gly	Ala	Ile	Ile	Tyr	Arg	Ile	Thr	Cys
						215					220				
Lys	Arg	Leu	Ile	Pro	Ser	Leu	Gly	Gln	Tyr	Glu	Gly	Lys	Gln	Ile	Phe
225					230					235					240
Glu	Gly	Tyr	Lys	Gln	Leu	Ser	Arg	Lys	Glu	Arg	Arg	Ala	Met	Thr	Met
				245					250					255	
Ala	Ile	Val	Val	Gly	Met	Leu	Tyr	Ala	Ala	Ile	Ile	Leu	Trp	Ala	Thr
			260					265					270		
Phe	Ser	Ser	Trp	Gly	Ile	Leu	Arg	Gly	Val	Asn	Gly	Gly	Leu	Ile	Arg
		275					280					285			
Ser	Pro	Phe	Ile	Met	Gly	Ile	Leu	Phe	Leu	Leu	Ser	Leu	Gly	Ala	Ala
	290					295					300				
Ile	Met	Gly	Met	Val	Tyr	Gly	Phe	Ser	Ser	Gly	Arg	Tyr	Arg	Ser	Asp
305					310					315					320
Asn	Asp	Val	Ile	Glu	Gly	Leu	Ala	Gln	Pro	Met	Lys	Leu	Leu	Gly	Gly
				325					330					335	
Tyr	Leu	Val	Ile	Ala	Phe	Phe	Ala	Ala	Gln	Met	Phe	Ala	Cys	Leu	Glu
			340					345					350		
Tyr	Ser	His	Leu	Asp	Lys	Cys	Val	Ala	Ile	Ile	Gly	Ala	Asn	Leu	Leu
		355					360						365		

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Ser Ser Val Gln Ala Gly Pro Leu Trp Thr Leu Ile Leu Phe Ile Leu
 370 375 380
 Phe Thr Ala Thr Ile Asn Leu Ile Met Val Ser Ala Thr Ala Lys Trp
 385 390 395 400
 Ala Phe Met Ala Phe Ile Phe Val Pro Val Phe Ala Arg Met Gly Ile
 405 410 415
 Glu Pro Asp Met Thr Gln Cys Ala Phe Arg Ile Gly Asp Ser Ala Thr
 420 425 430
 Asn Ala Ile Thr Pro Phe Met Phe Tyr Met Pro Leu Val Leu Thr Tyr
 435 440 445
 Met Gln Gln Tyr Asp Lys Gln Ala Thr Tyr Gly Ser Leu Leu Lys Tyr
 450 455 460
 Thr Trp Arg Tyr Ser Val Tyr Ile Leu Ile Gly Trp Thr Met Leu Leu
 465 470 475 480
 Phe Ile Trp Tyr Leu Thr Ser Leu Pro Leu Gly Leu
 485 490

<210> 8932
 <211> 240
 <212> PRT
 <213> B.fragilis

<400> 8932
 Ile Arg Met Ala Ser His Cys Val Gly Tyr Phe Lys Tyr Leu Gly Gln
 1 5 10 15
 His Val Gly Phe Phe Ser Arg Ile Thr Pro Val Phe Gln Glu Arg Arg
 20 25 30
 Lys Val Met Lys Ser Ser Leu Ile Val Val Ala Phe Phe Cys Ile Gly
 35 40 45
 Cys Leu Val Gly Ile Phe Asn Asp Phe Gln Phe Asp Met His Asn Leu
 50 55 60
 Ser Met Tyr Ile Leu Tyr Ala Leu Met Leu Gln Val Gly Ile Ser Ile
 65 70 75 80
 Gly Ser Asn Lys Asn Leu Lys Phe Leu Ile Lys Ser Leu Arg Pro Asn
 85 90 95
 Met Leu Leu Val Pro Ile Ala Thr Ile Val Gly Thr Leu Leu Phe Ser
 100 105 110
 Ala Phe Ala Ser Leu Leu Leu Ser Gln Trp Ser Val Phe Asp Cys Met
 115 120 125
 Ala Val Gly Ser Gly Phe Ala Tyr Tyr Ser Leu Ser Ser Ile Leu Ile
 130 135 140
 Thr Gln Phe Lys Glu Ala Ser Val Gly Leu Gln Leu Ala Thr Glu Leu
 145 150 155 160
 Gly Thr Ile Ala Leu Leu Ala Asn Ile Phe Arg Glu Met Met Ala Leu
 165 170 175
 Leu Gly Thr Pro Leu Ile Arg Lys Tyr Phe Gly Lys Leu Ala Pro Ile
 180 185 190
 Ser Ala Ala Gly Val Asn Ser Met Asp Val Leu Leu Pro Ser Ile Thr
 195 200 205
 His Tyr Ser Gly Lys Asp Met Ile Pro Val Ala Ile Phe His Gly Ile
 210 215 220
 Leu Ile Asp Met Ser Val Pro Phe Phe Val Ser Leu Phe Cys Ser Leu
 225 230 235 240

<210> 8933
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 8933

Val Met Val Ala Gly Gln Lys Met Gln Ser Ala Pro Cys Ser Ala Leu
 1 5 10 15
 Ser Pro Phe Asn Val Ile Arg Ser Gly Ser Pro Gly Pro Lys Asp Thr
 20 25 30
 Lys Arg Met Gly Cys Val Val Ile Ile Cys Tyr Arg Phe Ile Ile Leu
 35 40 45
 Met Phe Cys Lys Ser Glu Glu Asn Ile Ser Met Lys Gln Glu Leu Leu
 50 55 60
 Ser Ile Phe Asp Arg Cys Asn Leu Asn
 65 70

<210> 8934

<211> 163

<212> PRT

<213> B.fragilis

<400> 8934

Glu Ser Leu Tyr Lys Ile Phe Tyr Lys Ile Met Ser Glu Asn Lys Gln
 1 5 10 15
 Ala Leu Gln Val Ala Ala Leu Lys Asn Gly Thr Val Ile Asp His Ile
 20 25 30
 Pro Ser Glu Lys Leu Phe Thr Val Val Ser Leu Leu Gly Leu Glu His
 35 40 45
 Met Thr Thr Asn Ile Thr Ile Gly Phe Asn Leu Asp Ser Lys Lys Leu
 50 55 60
 Gly Lys Lys Gly Ile Ile Lys Ile Ala Asp Lys Phe Phe Cys Asp Glu
 65 70 75 80
 Glu Ile Asn Arg Ile Ser Val Val Ala Pro His Val Lys Leu Asn Ile
 85 90 95
 Ile Arg Asp Tyr Glu Val Val Glu Lys Lys Glu Val Arg Met Pro Asp
 100 105 110
 Glu Leu Lys Ala Ile Val Lys Cys Ala Asn Pro Lys Cys Ile Thr Asn
 115 120 125
 Asn Glu Pro Met Ala Thr Leu Phe His Val Ile Asp Lys Asp Asn Cys
 130 135 140
 Val Ile Lys Cys His Tyr Cys Glu Lys Glu Gln Lys Arg Glu Asp Ile
 145 150 155 160
 Thr Ile Ile

<210> 8935

<211> 198

<212> PRT

<213> B.fragilis

<400> 8935

Leu Val Thr Tyr Lys Val Asn Lys Lys Met Lys Gln Asp Trp Lys Pro
 1 5 10 15
 Gly Thr Leu Ile Tyr Pro Leu Pro Ala Val Leu Val Ser Cys Gly Ser
 20 25 30
 Asp Glu Ser Glu Tyr Asn Ile Leu Thr Val Ala Trp Thr Gly Thr Ile
 35 40 45
 Cys Thr Asn Pro Pro Met Cys Tyr Ile Ser Val Arg Pro Glu Arg His
 50 55 60
 Ser Tyr Pro Ile Ile Lys Lys Asn Met Glu Phe Val Ile Asn Leu Thr
 65 70 75 80
 Thr Arg Asp Met Ala Phe Ala Thr Asp Trp Cys Gly Val Arg Ser Gly
 85 90 95

Lys Asp Tyr His Lys Phe Glu Glu Met Lys Leu Thr Pro Gly Lys Cys
 100 105 110
 Ser Val Val Asp Ala Pro Leu Ile Glu Glu Ser Pro Leu Cys Ile Glu
 115 120 125
 Cys Arg Val Lys Glu Ile Val Ser Leu Gly Ser His Asp Met Phe Ile
 130 135 140
 Ser Asp Val Val Asn Ile Arg Ala Asp Asp Arg His Leu Asn Arg Glu
 145 150 155 160
 Thr Gly Lys Leu Glu Leu Ala Glu Ala Asn Pro Leu Val Tyr Val His
 165 170 175
 Gly Gly Tyr Tyr Asn Leu Gly Glu Lys Ile Gly Lys Phe Gly Trp Ser
 180 185 190
 Val Glu Lys Lys Thr Lys
 195

<210> 8936

<211> 682

<212> PRT

<213> B.fragilis

<400> 8936

Lys Lys Ala Tyr Ile Cys Tyr Leu Gln Thr Thr Asn Asn Met Met Arg
 1 5 10 15
 Tyr Ile Ile Leu Leu Val Leu Cys Ala Trp Thr Gly Ile Ala Leu Ala
 20 25 30
 Ile Asp Tyr His Ala Lys Asp Ser Leu Leu Leu Gln Leu Lys Gln Thr
 35 40 45
 Thr Ile Ala Ala Glu Arg Ile Asn Ile Tyr Arg Asn Leu Ala Asp Ile
 50 55 60
 Cys Phe Glu Thr Pro Asp Glu Lys Thr Tyr Leu Leu Asn Met Tyr Arg
 65 70 75 80
 Glu Ala Gln Lys Ala Gly Asp Thr Ser Gly Met Leu Asn Ala Leu Asn
 85 90 95
 Asp Leu Val Cys Gly Glu Thr Lys Glu Tyr Arg Met Asp Ser Ala Tyr
 100 105 110
 His Tyr Met Glu Leu Ile Lys Ala Ile Arg Glu Pro Gln Glu Thr Ala
 115 120 125
 Pro Val Leu Ala Tyr Leu Gln Met Arg Phe Phe Asp Thr Leu Cys Ser
 130 135 140
 His Asn Glu Thr Glu Glu Ala Ile Thr Lys Glu Leu Gln Phe Ile Glu
 145 150 155 160
 Glu Lys Lys Ser Asp Glu Ala Ser Leu Tyr Ser Lys Ile Ala Gln Ala
 165 170 175
 Tyr Ile Thr Gly Gly Ser Leu His Tyr Asn Asp Met Ile Lys Glu Ala
 180 185 190
 Leu Pro Tyr Leu Glu Thr Ala Met Asn Leu Ser Lys Gln Leu Pro Pro
 195 200 205
 Glu Lys Gln Ile Leu Phe Val Ser Ile Ile Val Trp Lys Leu Ser Asn
 210 215 220
 Thr Tyr Ser Met Leu Asn Lys Cys Asp Ser Ala Ile Arg Ile Leu Asp
 225 230 235 240
 Glu Asn Leu Gln Thr Gln Gln Gln Tyr Tyr Lys Asp His Tyr Gln Thr
 245 250 255
 Gln Arg Pro Phe Tyr Asn Met Ala Ile His Glu Leu Arg Phe Tyr Thr
 260 265 270
 Ser Leu Leu Thr Asn Ala Ile Ser Glu Ala Pro Glu Lys Met Asp Tyr
 275 280 285
 Tyr Trp Gln Gln Ile Val Lys Leu Asn Lys Lys Leu Thr Asn Pro Tyr
 290 295 300

Asp Arg Tyr Asn Tyr Phe Leu Ser Met Asp Asn Tyr Tyr Leu Asn Gln
 305 310 315 320
 Lys Pro Gln Pro His Tyr Glu Lys Ala Leu Val Ala Asn Asp Ser Leu
 325 330 335
 Ile Gln Ile Ala Gln Glu Ile Ile Pro Asn Asn Leu Pro Gly Leu Tyr
 340 345 350
 Asp Ile Gln Ser Gln Thr Tyr Glu Ala Met Gly Asn Phe Lys Glu Ala
 355 360 365
 Leu Ala Tyr Leu Arg Ile Ala Thr Gln Tyr Lys Asp Ser Leu Thr Thr
 370 375 380
 Glu Asn Met Gln Lys Gln Leu Gly Glu Leu Gln Ile Lys Tyr Glu Val
 385 390 395 400
 Asn Lys Leu Asn Asn Glu Lys Ser Gln Leu Glu Ile Lys Asn Lys Arg
 405 410 415
 Ile Leu Val Ile Cys Leu Ser Ile Ile Leu Ile Ile Val Ile Phe Val
 420 425 430
 Cys Leu Tyr Leu Tyr His Asp Leu Lys Lys Glu Lys Lys Met Lys Phe
 435 440 445
 His Leu Arg Asn Leu Lys Gln Lys Ala Glu Glu Ser Glu Lys Met Lys
 450 455 460
 Thr Ala Phe Ile Asn Ser Ile Cys His Glu Ile Arg Thr Pro Leu Asn
 465 470 475 480
 Ser Ile Val Gly Phe Ser Asp Leu Ile Phe Asn Asp Glu Ile Asp Lys
 485 490 495
 Glu Thr Arg Glu Gly Phe Ser Gln Glu Ile Gln Lys Ser Thr Ile Leu
 500 505 510
 Leu Thr Ser Leu Ile Asp Asn Met Leu Glu Ile Ser Ser Leu Asp Val
 515 520 525
 Ser Gln Glu Lys Leu Pro Cys Lys Glu Ala Asn Leu Asn Ser Ile Cys
 530 535 540
 Ile Gln Glu Met Thr Leu Leu Asn Arg Ser His Lys Pro Asp Ile Asp
 545 550 555 560
 Tyr Arg Thr Asp Leu Pro Glu His Pro Ile Ile Leu Thr Thr His Glu
 565 570 575
 Lys Tyr Leu Ser Leu Val Ile Glu His Leu Leu Asn Asn Ala Asn Lys
 580 585 590
 Phe Thr Glu Lys Gly Ile Ile Thr Leu His Cys His Ile Asp Glu Ala
 595 600 605
 Arg Gln Gln Val His Ile Ser Val Thr Asp Thr Gly Cys Gly Ile Pro
 610 615 620
 Ala Asp Lys His Lys Glu Val Phe Glu Arg Phe Ser Lys Leu Asn Ala
 625 630 635 640
 Phe Thr Pro Gly Asn Gly Leu Gly Leu Tyr Leu Cys Gln Leu Ile Ile
 645 650 655
 Arg Arg Leu Ser Gly Lys Ile Ser Ile Asp Pro Thr Tyr Thr Gly Gly
 660 665 670
 Thr Arg Ile Thr Val Ile Leu Pro Val Gln
 675 680

<210> 8937

<211> 310

<212> PRT

<213> B.fragilis

<400> 8937

Leu Met Pro His Arg Met Phe Thr Cys Lys Ile Glu Ala Gly Phe Arg
 1 5 10 15
 Val Phe Ile Phe Ile Ile Leu His Phe Val Leu Thr Asn Cys Ile Arg
 20 25 30

Glu Asp Met Ser Gly Cys Pro Arg Asp Asp Gly Gly Leu Ala Leu Lys
 35 40 45
 Phe Ser Tyr Asp Thr Asn Ala Asp Ser Arg Leu Ser Thr Ala Gln Gly
 50 55 60
 Val Asp Arg Leu Ala Val Phe Ile Phe Asp Glu Lys Gly Leu Phe Ile
 65 70 75 80
 Ser Gln Val Asn Asp Ser Met Thr Ser Ile Asn Asp Asp Tyr Val Met
 85 90 95
 Glu Leu Pro Tyr Lys Gln Gly Ser Tyr Gln Phe Val Ala Trp Gly Gly
 100 105 110
 Tyr Asp Lys Ser Thr Tyr Gln Thr Ser Glu Cys Val Pro Arg Lys Thr
 115 120 125
 Tyr Ile Asp Asp Phe Phe Leu Ser Val Lys Arg Gln Glu Asp Asn Arg
 130 135 140
 Val Thr Asn Gln Pro Lys Leu Leu Tyr His Gly Met His Asp Ile Val
 145 150 155 160
 Glu Leu Asn Ser Lys Glu Lys Thr Ile Val Leu Ile Asn Leu Lys Gln
 165 170 175
 Met Thr Asn His Ile Arg Val Ile Ala His Asn Leu Asn Gln Asp Arg
 180 185 190
 Ser Asp Asn Ile Tyr Ile Glu Asp Asn Asn Gly Lys Tyr Gly Tyr Asp
 195 200 205
 Ser Gln Phe Ser Asp Asp Asp Arg Ile Thr Tyr Ile Pro Ile Tyr Glu
 210 215 220
 Ala Ser Ser Glu Gln Ser Asn Pro Leu Ile Ala Asp Phe Asn Val Met
 225 230 235 240
 Arg Leu Glu Lys Asp Arg Glu Pro Arg Leu Arg Ile Ala Asp Lys Thr
 245 250 255
 Gly Thr Ile Arg Tyr Asp Glu Asn Leu Ile Gly Lys Leu Ile Gly Gly
 260 265 270
 Asn Pro Asn Ile Asp Phe Glu His Asn His Asp Phe Thr Ile Glu Ile
 275 280 285
 Ser Phe Asp Asn Tyr Ile Pro Val Ile Ile Lys Ile Asn Gly Trp Glu
 290 295 300
 Ile Val Asn Glu Glu Ile
 305 310

<210> 8938

<211> 317

<212> PRT

<213> B.fragilis

<400> 8938

Gln Leu Leu His Thr Met Ser Glu Lys Ala Pro Phe Met Val Phe Ser
 1 5 10 15
 Gly Thr Asn Ser Arg Tyr Leu Ala Glu Lys Ile Cys Ala Ser Leu Asn
 20 25 30
 Cys Pro Leu Gly Asn Met Asn Ile Thr His Phe Ala Asp Gly Glu Phe
 35 40 45
 Ala Val Ser Tyr Glu Glu Ser Ile Arg Gly Ala His Val Phe Leu Val
 50 55 60
 Gln Ser Thr Phe Pro Asn Ser Asp Asn Leu Met Glu Leu Leu Leu Met
 65 70 75 80
 Ile Asp Ala Ala Lys Arg Ala Ser Ala Lys Ser Val Val Ala Val Ile
 85 90 95
 Pro Tyr Phe Gly Trp Ala Arg Gln Asp Arg Lys Asp Lys Pro Arg Val
 100 105 110
 Ser Ile Gly Ala Lys Leu Val Ala Asp Leu Leu Ser Val Ala Gly Ile
 115 120 125

Asp Arg Leu Ile Thr Met Asp Leu His Ala Asp Gln Ile Gln Gly Phe
 130 135 140
 Phe Asn Ile Pro Val Asp His Leu Tyr Ala Ser Ala Val Phe Leu Pro
 145 150 155 160
 Tyr Ile Gln Ser Leu Lys Leu Asp Glu Leu Val Ile Ala Thr Pro Asp
 165 170 175
 Val Gly Gly Ser Lys Arg Ala Ser Thr Phe Ser Lys Tyr Leu Gly Val
 180 185 190
 Pro Leu Val Leu Cys Asn Lys Ser Arg Glu Lys Ala Asn Glu Val Ala
 195 200 205
 Ser Met Gln Ile Ile Gly Asp Val Lys Gly Lys Asn Val Val Leu Ile
 210 215 220
 Asp Asp Ile Val Asp Thr Ala Gly Thr Ile Thr Lys Ala Ala Asn Ile
 225 230 235 240
 Met Leu Glu Ala Gly Ala Asn Ser Val Arg Ala Ile Ala Ser His Cys
 245 250 255
 Val Met Ser Asp Pro Ala Ser Phe Arg Val Gln Glu Ser Gly Leu Thr
 260 265 270
 Glu Met Val Phe Thr Asp Ser Ile Pro Tyr Ser Lys Lys Cys Ala Lys
 275 280 285
 Val Lys Gln Leu Ser Ile Ala Asp Met Phe Ala Glu Thr Ile Lys Arg
 290 295 300
 Val Met Asn Asn Glu Ser Ile Ser Ser Gln Tyr Ile Ile
 305 310 315

<210> 8939

<211> 94

<212> PRT

<213> B.fragilis

<400> 8939

Lys Val Thr Gln Cys Thr Pro Trp Gln Leu Leu Cys Ile Ser Cys Arg
 1 5 10 15
 Thr Val Pro Leu Phe His Leu Ile Leu Ile Ser Glu Arg Lys Glu Ile
 20 25 30
 Asn Gln Thr Thr Lys Gln Gly Val Ile Gln Ile Asn Pro Leu Asn Gln
 35 40 45
 Cys Thr Cys Thr Met Gln Cys Pro Tyr Arg Ile Leu Phe Ser Cys Thr
 50 55 60
 Ala Leu Cys Met Leu Tyr Val Val Asn Asn Arg Phe Ile Leu Phe Ile
 65 70 75 80
 Asn Tyr Ser Ala Lys Val Ile Leu Leu Arg Ile Phe Ser Lys
 85 90

<210> 8940

<211> 388

<212> PRT

<213> B.fragilis

<400> 8940

Ile Lys Arg Gln Ile Pro Met Lys Gln Phe Leu Ile Gly Cys Ala Leu
 1 5 10 15
 Leu Ala Cys Ile Ser Leu Ala Gly Cys Arg Pro Lys Asn Asn Gln Asn
 20 25 30
 Ala Thr Ile Val Thr Gly Glu Val Ser Asp Thr Ser Ser Val Arg Ile
 35 40 45
 Thr Pro Val Tyr Ala Lys Gly Phe Lys Val Thr Tyr Thr Pro Thr Cys
 50 55 60
 Arg Leu Val Asp Ile Ser Asp Pro Gln Lys Glu Gly Gly Glu Ser Phe

65	70	75	80
His Tyr Ala Leu Val	Pro Gly Gly Thr Lys	Pro Glu Asn Ile	Pro Ala
	85	90	95
Gly Tyr Thr Val Ile	Glu Thr Pro Val Lys	Ser Val Ile Cys Met	Thr
	100	105	110
Ser Leu Gln Leu Ser	Asn Phe Ile Lys	Leu Asp Ala Leu	Ser His Val
	115	120	125
Val Gly Ile Thr Ser	Thr Arg His Leu Phe	Asn Lys Glu Met	Asn Glu
	130	135	140
Arg Leu Lys Gln Gly	Lys Thr Ala Lys Ile	Gly Ile Glu Gly	Asn Phe
	145	150	155
Asp Asn Glu Val Ile	Met Ser Val Asn	Pro Asp Val Ile	Phe Ile Ser
	165	170	175
Pro Phe Lys Arg Gly	Gly Tyr Asp Ala Met	Arg Glu Val Gly	Ile Pro
	180	185	190
Leu Val Pro His Leu	Gly Tyr Lys Glu Met	Thr Pro Leu Gly	Gln Ala
	195	200	205
Glu Trp Ile Lys Phe	Ile Gly Leu Phe Ile	Gly Glu Glu Glu	Thr Ala
	210	215	220
Asn Arg Lys Phe Ala	Ala Ile Glu Lys His	Tyr Asn Glu Leu	Lys Glu
	225	230	235
Arg Val Ala His Val	Lys Lys Arg Pro Val	Phe Ser Gly Glu	Ile
	245	250	255
Arg Gly Gly Asn Trp	Tyr Ala Val Gly	Lys Ser Phe Leu	Ala Gln
	260	265	270
Leu Phe Arg Asp Ala	Gly Ala Asp Tyr	Phe Leu Lys Asp	Asp Pro Arg
	275	280	285
Ser Gly Gly Val Thr	Leu Asp Phe Glu	Thr Val Tyr Ser	Gln Ala Glu
	290	295	300
Ser Ala Asp Tyr Trp	Arg Ile Val Asn	Ser Phe Asp Gly	Thr Phe Ser
	305	310	315
Tyr Asp Val Leu Lys	Ser Glu Asp Pro	Arg Tyr Ala Asp	Phe Arg Ala
	325	330	335
Phe Arg Glu Lys Gly	Val Ile Tyr Cys	Asn Met Arg Glu	Lys Pro Phe
	340	345	350
Tyr Glu Ser Met Pro	Thr Gln Pro Glu	Val Leu Leu Glu	Asp Leu Ile
	355	360	365
Lys Ala Phe His Pro	Asp Leu Pro Asp	Tyr Thr Pro Val	Tyr Tyr
	370	375	380
Glu Arg Leu Asn			
385			

<210> 8941

<211> 789

<212> PRT

<213> B.fragilis

<400> 8941

Leu Ser Leu Gln Leu	Arg Ile Lys Leu	Arg Asn Lys Met	Ile Lys Lys
1	5	10	15
Ile Val Lys Gly Leu	Trp Val Phe Phe	Ala Leu Met Val	Leu Ala Gly
	20	25	30
Ile Ala Val Phe Ala	Ser Ile Ala Tyr	Gly Trp Ile Gly	Tyr Met Pro
	35	40	45
Pro Val Glu Glu Leu	Glu Asn Pro Asn	Tyr Lys Phe Ala	Thr Glu Ile
	50	55	60
Leu Ser Glu Asp Gly	Lys Val Leu Gly	Thr Trp Ser Leu	Ser Lys Glu
	65	70	75
Asn Arg Val Tyr Thr	Ser Tyr Asn Glu	Leu Ser Pro Asn	Ile Val Asn
	370	375	380

				85					90				95
Ala	Leu	Ile	Ala	Thr	Glu	Asp	Val	Arg	Phe	Thr	Glu	His	Ser
			100					105					110
Asp	Ala	Lys	Ala	Leu	Ile	Arg	Ala	Val	Val	Lys	Arg	Gly	Leu
		115					120					125	Leu
Gln	Lys	Asn	Ala	Gly	Gly	Gly	Ser	Thr	Leu	Ser	Gln	Gln	Leu
	130					135					140		Ala
Gln	Leu	Phe	Thr	Asp	Glu	Val	Ala	Arg	Asn	Thr	Leu	Gln	Arg
145					150				155				160
Gln	Lys	Pro	Ile	Glu	Trp	Val	Ile	Ala	Val	Lys	Leu	Glu	Arg
				165					170				175
Thr	Lys	Glu	Glu	Ile	Leu	Ser	Met	Tyr	Leu	Asn	Lys	Phe	Asp
			180					185				190	Phe
Asn	Asn	Ala	Val	Gly	Ile	Lys	Thr	Ala	Ser	Tyr	Thr	Tyr	Phe
		195					200					205	Gly
Glu	Pro	Lys	Asp	Leu	Lys	Ile	Glu	Gln	Ala	Ala	Thr	Leu	Ile
	210					215					220		Met
Cys	Lys	Asn	Pro	Ser	Leu	Tyr	Asn	Pro	Val	Arg	Phe	Asn	Glu
225					230					235			240
Arg	Gly	Arg	Arg	Asn	Thr	Val	Leu	Asp	Gln	Met	Arg	Lys	Ala
				245					250				255
Ile	Thr	Ala	Glu	Glu	Cys	Asp	Ser	Leu	Gln	Asn	Leu	Pro	Leu
		260						265					270
Val	Tyr	His	Arg	Val	Asp	His	Lys	Glu	Gly	Leu	Ala	Thr	Tyr
	275						280					285	Phe
Glu	Tyr	Leu	Arg	Gly	Val	Met	Thr	Ala	Ser	Lys	Pro	Val	Arg
	290					295					300		Ser
Tyr	Arg	Gly	Trp	Gln	Met	Gln	Lys	Phe	Tyr	Glu	Asp	Ser	Ile
305					310					315			320
Glu	Met	Asn	Pro	Leu	Tyr	Gly	Trp	Cys	Glu	Lys	Asn	Lys	Lys
				325					330				335
Gly	Ser	Asn	Tyr	Asn	Ile	Tyr	Thr	Asp	Gly	Leu	Lys	Ile	Tyr
			340					345					350
Ile	Asn	Ser	His	Met	Gln	Arg	Tyr	Ala	Glu	Glu	Ala	Val	Glu
	355						360					365	Glu
Val	Gly	Glu	Tyr	Leu	Gln	Pro	Leu	Phe	Phe	Lys	Glu	Lys	Lys
	370					375					380		Gly
Lys	Lys	Ala	Pro	Tyr	Ser	Asn	Gln	Leu	Thr	Gln	Glu	Glu	Ile
385					390					395			400
Ile	Leu	Asp	Arg	Ala	Val	Lys	Gln	Thr	Ser	Arg	Tyr	Gln	Thr
				405					410				415
Glu	Ala	Gly	Ile	Ser	Glu	Ala	Glu	Ile	Lys	Lys	Ala	Phe	Asn
			420					425				430	Lys
Glu	Ser	Met	Ser	Val	Phe	Thr	Trp	His	Gly	Val	Lys	Asp	Thr
		435					440					445	Ile
Ser	Pro	Met	Asp	Ser	Ile	Arg	Tyr	Tyr	Lys	His	Phe	Leu	Arg
	450					455					460		Ala
Phe	Met	Ser	Met	Asp	Pro	Ile	Asn	Gly	Gln	Val	Lys	Ala	Tyr
465					470					475			480
Gly	Pro	Asn	Tyr	Thr	Tyr	Phe	Gln	Tyr	Asp	Met	Ala	Met	Val
				485					490				495
Arg	Gln	Val	Gly	Ser	Thr	Ile	Lys	Pro	Tyr	Leu	Tyr	Ala	Leu
			500					505					510
Glu	Asn	Gly	Phe	Ser	Pro	Cys	Asp	Glu	Thr	Arg	Asn	Val	Glu
	515						520					525	Ile
Leu	Ile	Asp	Glu	Asn	Gly	Lys	Pro	Trp	Ser	Pro	Lys	Asn	Thr
	530					535					540		Ser
Gly	His	Tyr	Gly	Glu	Met	Val	Thr	Leu	Lys	Trp	Gly	Leu	Ala
545					550					555			560

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Asn Asn Trp Ile Ser Ala Tyr Leu Met Ser Lys Leu Asn Pro Tyr Ala
 565 570 575
 Leu Ala Arg Leu Ile His Ser Phe Gly Val Arg Asn Lys Glu Ile Gln
 580 585 590
 Pro Thr Val Ser Leu Cys Leu Gly Pro Cys Glu Ile Ser Val Gly Glu
 595 600 605
 Met Val Ser Ala Tyr Thr Ala Phe Ala Asn Lys Gly Ile Arg Val Ala
 610 615 620
 Pro Leu Phe Val Thr Lys Ile Glu Asp Ser Glu Gly Asn Val Leu Ala
 625 630 635 640
 Thr Phe Ser Pro Gln Met Glu Glu Val Ile Ser Ala Ser Ser Ala Tyr
 645 650 655
 Lys Met Leu Val Met Leu Arg Ala Val Ile Asn Glu Gly Thr Gly Ala
 660 665 670
 Arg Val Arg Arg Tyr Gly Ile Thr Ala Asp Met Gly Gly Lys Thr Gly
 675 680 685
 Thr Thr Asn Arg Asn Ser Asp Gly Trp Phe Met Gly Phe Thr Pro Ser
 690 695 700
 Leu Val Ser Gly Cys Trp Val Gly Gly Glu Glu Arg Asp Ile His Phe
 705 710 715 720
 Asp Thr Met Thr Tyr Gly Gln Gly Ala Ser Leu Ala Leu Pro Ile Trp
 725 730 735
 Thr Lys Tyr Met His Lys Val Tyr Ala Asp Gln Thr Leu Gly Tyr Asp
 740 745 750
 Pro Lys Glu Thr Phe Asn Leu Pro Asp Gly Phe Asp Pro Cys Lys Asp
 755 760 765
 Phe Ser Ile Ser Gly Asp Ser Ile Ile Asp Glu Pro Glu Ser Gly Leu
 770 775 780
 Asp Asp Leu Phe Asn
 785

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 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 8942
 Pro Ile Leu Lys Val Tyr Lys Ser Met Gly Lys Thr Leu Pro Glu Asn
 1 5 10 15
 Ser Ser Arg Asn Phe Ile Thr Val Leu Arg Ala Ala Arg Thr Ser Lys
 20 25 30
 Ser Arg Tyr Leu Gln Asn Thr Arg Asp Cys Lys Tyr Thr Thr Ala Asn
 35 40 45
 Ser Glu Asp His Arg Cys Tyr His Arg Gln His Arg
 50 55 60

<210> 8943
 <211> 208
 <212> PRT
 <213> B.fragilis

<400> 8943
 Asn Asn Ile Lys Thr Lys Ser Met Glu Asn Gln Glu Thr Lys Thr Glu
 1 5 10 15
 Lys Lys Ile Val Lys Val Lys Leu Ser Asp Ala Ile Lys Lys Ala Ser
 20 25 30
 Ile Leu Lys Ala Val Leu Leu Ala Tyr Lys Asp Lys Glu Leu Ser Ala
 35 40 45
 Glu Leu Lys Ser Lys Val Met Met Thr Arg Ile Tyr Tyr Gly Lys Phe

50		55		60
Arg Lys Gln Phe Glu Glu Asp Val Lys Glu Ala Arg Glu Gly Leu Lys				
65		70		75
Pro Glu Gly Tyr Asp Thr Gln Leu Gln Glu Ile Asp Glu Leu Glu Asn				80
	85		90	95
Lys Ala Arg Gly Asp Lys Asp Ile Arg Asn Leu Thr Pro Glu Met Leu				
	100		105	110
Lys Ser Ala Leu Thr Glu Glu Glu Tyr Asp Lys His Glu Thr Phe Met				
	115		120	125
Pro Ile Phe Asn Lys Tyr Met Glu Glu Val Thr Asn Phe Lys Ser Glu				
	130		135	140
Lys Leu Asp Glu Glu Val Glu Met Glu Glu Lys Lys Phe Thr Gln Lys				
145		150		155
Glu Phe Asp Glu Ile Leu Asn Val Asn Thr Ala Glu Ser Tyr Asn Leu				
	165		170	175
Asp Leu Cys Met Pro Tyr Asn Gly Lys Asn Met Ile Phe Pro Gly Thr				
	180		185	190
Met Lys Ser Ala Asp Phe Met Glu Val Leu Tyr Glu Glu Phe Ile Asp				
	195		200	205

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<213> B.fragilis

<400> 8944

Phe Gly Asp Lys His Val Glu Phe Ala Thr Cys Leu Trp Asn Asn Ser		
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Thr Asn Lys Ile Leu Leu Leu Leu Leu Leu Ile Lys Leu Glu Ile Lys		
	20	25
Lys Asn Leu Ile Met Lys Lys Leu Lys Phe Asn Leu Leu Thr Gly Leu		
	35	40
Leu Leu Leu Ile Ser Val Ser Val Phe Ala Ala Gly Phe Pro Pro Pro		
	50	55
Asp Lys Val Gln Glu Thr Phe Gln Lys Met Tyr Pro Lys Val Thr Thr		
65	70	75
Val Asp Trp Gln Arg Lys Gly Asp Tyr His Ile Ala Asp Ile Arg Val		
	85	90
Asp Gly Arg Glu Leu Asn Val Trp Phe Ser Asp Lys Gly Lys Trp Leu		
	100	105
Met Thr Glu Val Asp Val Glu Thr Leu Glu Ala Val Pro Ala Ala Val		
	115	120
Ala Lys Ala Phe Met Gln Ser Thr Met Ala Ser Met Gln Leu Glu Asp		
	130	135
Val Arg Ile Ile Thr Phe Pro Lys Gln Pro Ala Val Ile Val Ile Glu		
145	150	155
Val Glu Glu Tyr Asn Thr Asp Ser Glu Phe Gln Leu Phe Tyr Ala Pro		
	165	170
Asp Gly Lys Leu Leu Gln Thr Leu Asn Val Ser Asp Thr Gly Gly Glu		
	180	185
Ile Tyr Pro Gly Leu Phe		190
	195	

<210> 8945

<211> 137

<212> PRT

<213> B.fragilis

<400> 8945

Lys Asn Lys Lys Met Ser Arg Gly Leu Arg Asn Asn Asn Pro Gly Asn
 1 5 10 15
 Ile Arg His Asp Arg Asp Lys Trp Gln Gly Glu Ile Val Pro Ser Gln
 20 25 30
 Asp Arg Lys Phe Lys Gln Phe Ile Ser Met Ala Tyr Gly Tyr Arg Ala
 35 40 45
 Leu Ile Lys Leu Leu Gln Asn Tyr Arg Lys Leu His Asn Arg Gln Thr
 50 55 60
 Ile Ala Glu Phe Ile Asn Arg Tyr Ala Pro Pro Cys Glu Asn Asn Thr
 65 70 75 80
 Ser Gly Tyr Ile Thr Arg Val Cys Ser Glu Met Gln Val Pro Ser Thr
 85 90 95
 Tyr Ile Pro Asp Ile Asp Asp Lys Ala Thr Met Cys Ala Phe Ala Ala
 100 105 110
 Ala Ile Gly Gln Val Glu Asn Gly Val Pro Ala Val Met Ala Asp Ile
 115 120 125
 Glu Ala Gly Trp Asp Leu Leu Met Lys
 130 135

<210> 8946

<211> 259

<212> PRT

<213> B.fragilis

<400> 8946

Phe Arg Arg Lys Asp Arg Lys Ile Arg Leu Val Ser Arg Lys Glu Asn
 1 5 10 15
 Lys Val Lys Arg Ile Val Leu Leu Phe Ile Ser Ile Trp Ile Ala Phe
 20 25 30
 Ala Ala Tyr Gly Glu Asp Asn His Lys Lys Glu Arg His Pro Asp Asp
 35 40 45
 Arg Lys Ile Asn Val Gly Ile Arg Gly Gly Phe Asn Ser Ser Met Phe
 50 55 60
 Leu Val Ser Asp Leu Lys Ile Lys Asp Val Thr Ile Asp Glu Ile Gln
 65 70 75 80
 Asn Asn Tyr Lys Ile Gly Tyr Phe Gly Ala Leu Phe Met Arg Leu Asn
 85 90 95
 Met Lys Arg His Phe Ile Gln Pro Glu Ile Ser Tyr Asn Ile Ser Arg
 100 105 110
 Cys Glu Ile Ser Phe Asp Lys Leu Gly Ser Gln His Pro Asp Ile Glu
 115 120 125
 Pro Asp Tyr Ala Ser Val Ser Ser Thr Ile His Ser Ile Asp Phe Pro
 130 135 140
 Leu Leu Tyr Gly Tyr His Val Val Lys Gln Gly Pro Tyr Thr Met Ser
 145 150 155 160
 Leu Phe Ala Gly Pro Lys Leu Arg Tyr Leu Trp Asn Lys Lys Asn Lys
 165 170 175
 Ile Thr Phe Glu Asn Phe Asp Gln Gln Gly Ile His Glu Lys Leu Tyr
 180 185 190
 Pro Phe Asn Val Ser Ala Val Ile Gly Val Ser Val Asn Ile Ser Arg
 195 200 205
 Ile Phe Phe Asp Phe Arg Tyr Glu Gln Gly Leu His Asn Leu Ser Lys
 210 215 220
 Ser Val Thr Tyr Asp Asn Ile Asp Met Glu Gly Arg Pro Glu Val Ser
 225 230 235 240
 Asn Ile Thr Phe Arg Arg Arg Asp Asn Val Leu Ser Phe Ser Leu Gly
 245 250 255
 Val Ile Phe